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A proposal is made for the organization of the first year of a semi-residential state school for the hearing impaired. The school's major components, functions, and compatible staffing arrangement are presented in chart form and discussed. The content material and division curriculum outlines to be used in teaching science, music, physical education, reading, and arithmetic are listed. The roles of special supportive personnel and of two new teachers, and proposals for evening, nursery, and pre-vocational programs are discussed; guides for administration and decision making are presented. The appendix includes position papers about preschool education by Dr. Mary Jane Strattner, suggestions for activities, teaching methods, and instructional material for sciences, music, and physical education, and information on phases of construction and development of the school. (GD)

ED031829

THE
MARGARET S. STERCK
SCHOOL
FOR
HEARING IMPAIRED

(Delaware's State School for the Deaf)

MARGARET S. STERCK
SCHOOL

IN THE
NEWARK SPECIAL SCHOOL DISTRICT
NEWARK, DELAWARE

EC003673E

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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"Educational Programming, Staffing and Curriculum Development Study for the Margaret S. Sterck School for the Hearing Impaired."

Phase I

Chestnut Hill Road and Cherokee Drive
Newark, Delaware 19711

Funds for this study were made available
by E.S.E.A. Title I 89-313.

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I. Introduction

The purpose of this report is to summarize the progress of the Sterck School Tilte I 1968 summer project. These findings will be the essence of a Title III project for submission in the fall of 1968 by Mr. J. Paul Rudy.

II. School Development Priorities

The State of Delaware being the first State in the Union now has a unique chance in being the innovator in the field of education for the Hearing Impaired.

For some one hundred years we have seen the Deaf being educated in essentially two distinct environments – the Residential and the Public School Day Classes. The either or environments have been solutions to the deaf educational problem to some extent. We have either prolonged or pushed association with the "hearing world" to the point of maladjustment.

The need exists for an educational atmosphere where the hearing impaired can have the "sheltered" and "integrated" in prescribed doses.

To create such an atmosphere is a complex problem. The educator of the deaf has somehow encouraged "the special education concept" and thereby relieving the "normal hearing" educator of possibly some of his responsibilities.

Our perception of deafness will usually determine the atmosphere we create. The administration and staff of the Sterck School for Hearing Impaired view the deaf child essentially as a whole child with a hearing impairment.

Our physical location is one of adjacency to "normal hearing" elementary and secondary schools. It is important to note that we believe there is importance in separation of physical plants from the "normal hearing" schools at this point in the educational continum. There is an optimum size and number of hearing impaired students needed for specialized and supportive instruction programs to exist on a continual basis.

The educator of the Deaf needs to be reminded that in whatever atmosphere he finds employment his product will evidently be living in a semi-hearing world. It behooves us to prepare them for such an environment.

The educational concepts that follow attempt to keep the goal in mind that the deaf student will be attempting to mingle in a hearing world. We should likewise not forget that they too like ourselves, mingle with those with like interests.

The classic teacher for the deaf has been trained in instutions which themselves have radiated the concept of "differentness". Therefore, a need exists to "open the windows" and allow the outside world to sensorially touch the lives of the hearing impaired. In order to accomplish this, other talents than teachers for the deaf are needed.

The supervisory of hard core needs to be well qualified teachers of the deaf who are essentially educational diagnosticians. Accompanying these specialists in command for the development of language and speech the broader conceptualizations of the humanities, Arts and Sciences may be presented by selected Child Developmentalist, elementary, secondary and para professionals. It seems quite feasible that with such an arrangement the hearing impaired would be better prepared to live an enjoyable life in a semi-hearing world.

III. School Organization – Experimental Pattern

STERCK SCHOOL FOR THE HEARING IMPAIRED

NEWARK SPECIAL SCHOOL DISTRICT

NEWARK, DELAWARE

A PROPOSAL FOR STAFF ORGANIZATION

Submitted by

J. Paul Rudy, Principal

and

L. Craig Wilson, Consultant

July 5, 1968

The purpose of this paper is to project a pattern of staff organization appropriate for the Sterck School in its first year of operation as a semi-residential state school for the hearing-impaired administered by the Newark Special School District.

In a large measure, the two attached charts tell the whole story. The first delineates the school's major components and functions; the second outlines a compatible staffing arrangement.

An Overview of the Sterck School: Rationale for Organization

The heart of any school with a mission as specialized as that of the Sterck School must be a hard core of educational specialists, in this case, fully-certified teachers of the hearing impaired. However, a good school is much more than a collection of specialists; it is a configuration of talent, some professional and trained for specific clinical roles, others equally professional but assigned to more general supportive roles, and still others in a paraprofessional or aide capacity to the two principal types of professionals. In addition, there are ancillary services in support of the whole operation. *The real issue of staffing is involved in the control of decision-making – the distribution of authority and the fixing of responsibility in such a way that broadly-based, fully-professional decisions consistently and easily emerge from normal, day-to-day staff and student interaction.*

Some educators have felt that the kind of tight staff homogeneity which high and rigidly-policed certification for clinical roles produces is the ultimate answer to professional decision-making. The authors of this position paper hold a different opinion – namely, that the students in a special school are, first, children – whole children – and secondly, children with a handicap of living in a too-silent world.

To make connections with the broader dimensions of the handicapped child's developing interests from early pre-school to high school, the staff needs a base of talent, specialization, and personality well beyond clinical preparation for the education of the deaf. This can be most easily accomplished by doing two critical things:

1. creating the position of *"associate teacher of the deaf,"* and simultaneously
2. creating the position of *"teaching supervisor of the deaf."*

The first position can then draw upon the largest and most diversified pool of talent in professional education – the professionally trained elementary school teacher.

The second position can recruit exclusively from the ranks of special education, adding to clinical preparation the leadership function of supervision.

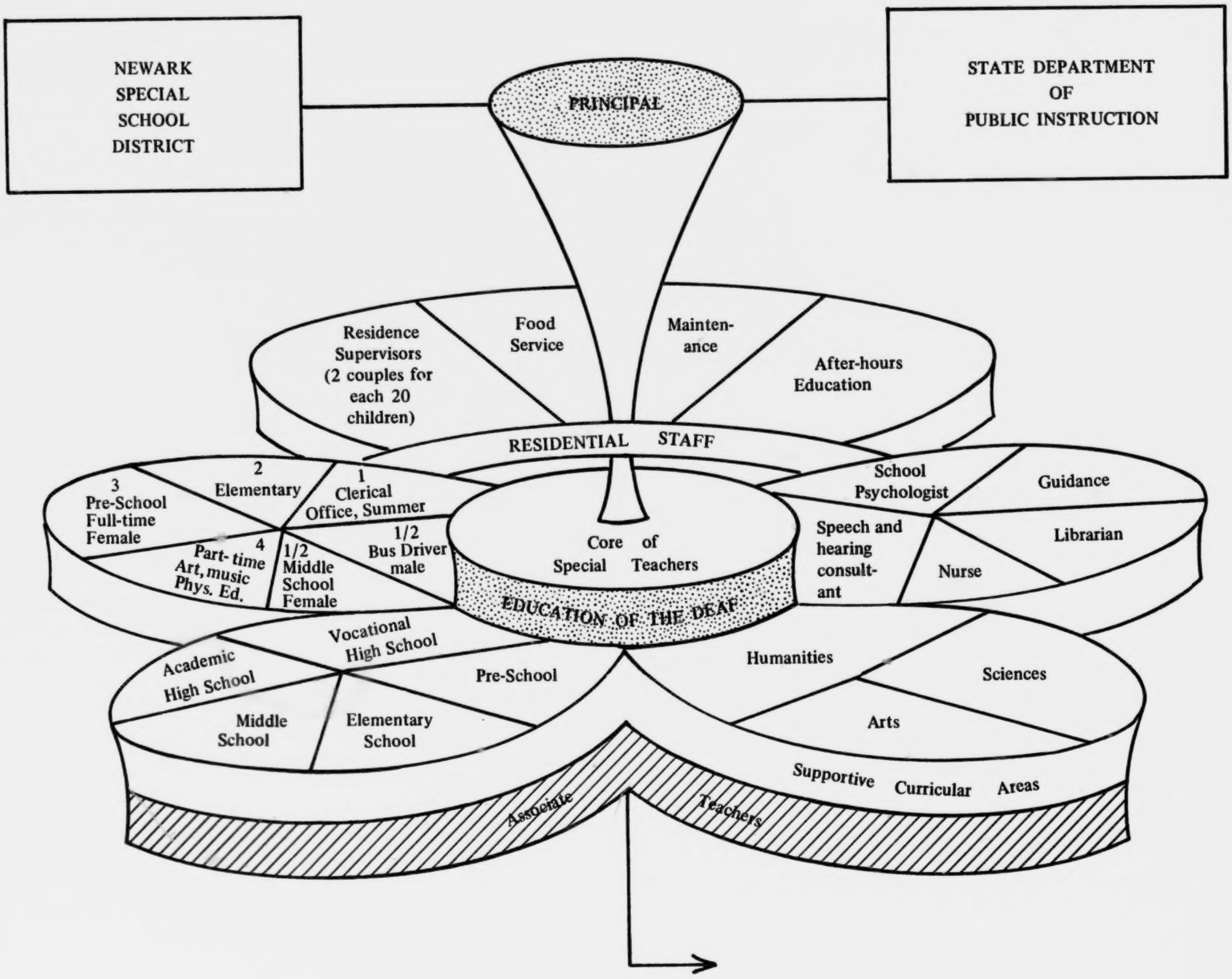
The two roles, naturally, become totally interdependent with the latter being vested with the uncontested right of final decision. It should be emphasized, though, that *both* groups are now *equally unprepared.* Elementary teachers will need special orientation to work as associate teachers on a clinical team; similarly, supervision of a team of multi-talented teachers may not come easy for the clinician.

Yet, the difficulty itself is very likely the measure of the need to make the change. Schools for the deaf have tended to build curricula which are language-bound. Hard of hearing children obviously need help in decoding the written word; however, they also deserve – and should respond dramatically to – the kinds of non-remedial personal interests which associate teachers with colorful "fields of interest" (art, music, etc.) could bring to the school environment.

Chart I can now be profitably examined to identify the various dimensions of the professional roles which the *composite competence* of the staff should include. Chart II then follows immediately to define a compatible staffing chart.

CHART I

DIMENSIONS OF NEEDED STAFF TALENT


NEWARK SPECIAL SCHOOL DISTRICT
PRINCIPAL
STATE DEPARTMENT OF PUBLIC INSTRUCTION
Residence Supervisors (2 couples for each 20 children)
Food Service
Mainten-ance
After-hours Education
RESIDENTIAL STAFF
3 Pre-School Full-time Female
2 Elementary
1 Clerical Office, Summer
4 Part-time Art, music Phys. Ed.
1/2 Middle School Female
1/2 Bus Driver male
Core of Special Teachers
EDUCATION OF THE DEAF
School Psychologist
Guidance
Speech and hearing consult-ant
Librarian
Nurse
Academic High School
Vocational High School
Pre-School
Middle School
Elementary School
Humanities
Sciences
Arts
Supportive Curricular Areas
Associate Teachers

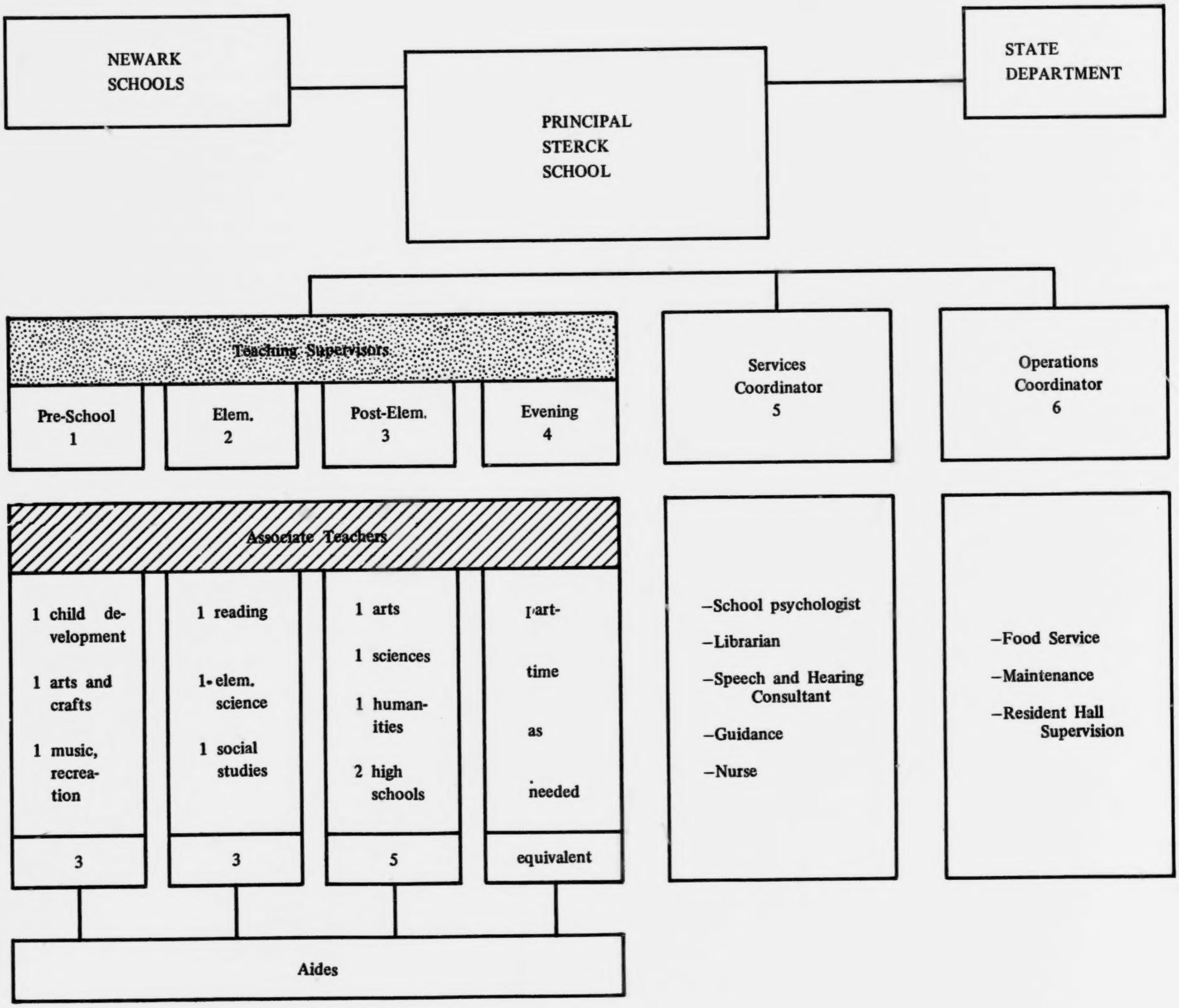
KEY:

☐ Special Education Teachers; Key Members of Staff, some of which will be "Teaching Supervisors"

▨ "Associate Teachers"; Work under Teaching Supervisors; Fully Certified Elementary Teachers

CHART II

PROPOSED STAFF ORGANIZATION


NEWARK SCHOOLS
PRINCIPAL STERCK SCHOOL
STATE DEPARTMENT
Teaching Supervisors
Pre-School 1
Elem. 2
Post-Elem. 3
Evening 4
Services Coordinator 5
Operations Coordinator 6
Associate Teachers
1 child development
1 arts and crafts
1 music, recreation
3
1 reading
1 elem. science
1 social studies
3
1 arts
1 sciences
1 humanities
2 high schools
5
part-time as needed
equivalent
–School psychologist
–Librarian
–Speech and Hearing Consultant
–Guidance
–Nurse
–Food Service
–Maintenance
–Resident Hall Supervision
Aides

Code:

▒ Special education teachers with salary subsidies for supervision

▨ Associate teachers of the deaf

Organization Summarized

In conclusion, it is proposed that the Sterck School have six, and only six, coordinators reporting directly to the principal. Four of these will represent levels of the instructional program; one will oversee all supportive services; and still another, the continuing operations of the school.

There will be three basic teaching teams, each headed by a "Teaching Supervisor," staffed with "Associate Teachers," and backstopped by appropriate "Aides."

Implementation of the proposal will require:

1. State Department approval of a school-wide certification plan which recognizes two new roles:
    (a) "Teaching Supervisor of the Deaf," and
    (b) "Associate Teacher of the Deaf"
2. Salary Subsidies for teaching supervisors at a minimum of five hundred dollars per year above the regular salary schedule for special education teachers.
3. Approval of full salaries for "Teaching Associates" on the Newark District salary schedule (e.g., no financial penalty for serving the needs of the partially hearing under competent supervision)
4. The purposeful recruitment of aides for special team duties.

Within this structure, more specific teacher roles can be defined in practice. But, before this is possible, one must first have the authorization to try. Such is the request of this paper and its hope for the first precedent-setting year of the Sterck school's operation.

IV. CURRICULUM CHARACTERISTICS

SUMMARY STATEMENT

In 1937 the Committee on Nomenclature of the Conference of Executives of American Schools for the Deaf proposed the following definitions which are still valid:

1. *The Deaf:* Those in whom the sense of hearing is nonfunctional for the ordinary purpose of life. This general group is made up of two distinct classes based on the time of the loss of hearing:
    a. *The Congenitally Deaf:* Those who were born deaf.
    b. *The Adventitiously Deaf:* Those who were born with normal hearing but in whom the sense of hearing became nonfunctional later through illness or accident.
2. *The Hard of Hearing:* Those in whom the sense of hearing although defective, is functional, with or without a hearing aid. The hearing impaired include all of the above.

In their formative years children learn speech and language, both reception and expression, primarily through the ear. Sectional pronunciations and accents learned as children are likely to be retained throughout life. The two-year-old deaf child has no useful verbal language, whereas the hearing child of the same age has begun to develop a meaningful spoken and hearing vocabulary. Hence, means of communication with the deaf child must be developed through systematic and in many instances, laborious procedures.

The deaf child needs special instructions so that he may substitute other modes of perception during the learning of language. This instruction usually begins after the age at which a hearing child would have learned to speak and to understand speech, and therefore the deaf child does not become competent in the use of language until long after the hearing child.

In teaching language to a deaf child we teach him to understand speech or the manual alphabet and/or the language of signs, and to use language expressively either in speech or in writing. When this training has been successful, the mental ability of the deaf child usually appears to be normal.

When the deaf child enters school he is usually without speech or an understanding of language. It takes approximately three years to prepare the child for the first grade and a total of from ten to twelve years to complete the eight elementary grades. The deaf child therefore becomes retarded as a result of his difficulty in the acquisition of language.

The rate of progress for deaf children varies from the norms of hearing children. For example, it takes a deaf child approximately two years to complete the second grade and one and a half years to cover third grade material. This plateau in learning is discouraging to parents and the children.

Educational achievement scores are influenced by the age at which the child enters school, the amount of recreational reading, the amount and use of residual hearing and the opportunities for problem solving.

Before he can learn to read, the child must have an understanding of language. Reading, or written language, is a derivative of spoken language. The written forms are symbols for spoken symbols. In order to derive meaning from the written symbols, one should have previous knowledge of the language patterns these written symbols represent. Deaf children, lacking this knowledge of auditory symbols, are at an extreme disadvantage in learning to read.

Reading is a process of getting thought from printed symbols into their oral counterparts, the words and meanings are usually readily available to him. But if his vocabulary and language patterns are limited, this will not be true. He may sound out the words, but he will not understand their meaning.

The deaf child is at a double disadvantage. He cannot easily convert written symbols into oral symbols and his language grows so slowly that many of the words he is struggling to indentify in written form have no meaning to him in any form.

Although almost every deaf child, like his hearing brother, is exposed to spoken language before he learns to read, unlike his hearing counterpart he does not master the sound system. The profoundly deaf child generally misses the vital clues to linguistic meaning which are conveyed through pitch, stress, juncture. Compared to the hearing child of six or seven, the deaf child's linguistic performance and competency are fragmentary. Nevertheless, the average deaf child, who is not additionally handicapped, does learn to read.

We find that the student has little trouble with beginning reading because the vocabulary is limited in quantity; most of the words are concrete with readily available referents; and the sentence structure is sufficiently simple Also, much of the reading matter used comes from experience stories and other teacher made materials which utilize familiar language that has directly emerged from the child's own activities.

It is later on that the trouble begins. The deaf child proceeds very slowly in mastering linguistic skills. The gap between his language level and the language of books widens quite suddenly. The language of beginning reading materials, while quite appropriate for the deaf catch up with the hearing child's actual language level. The vocabulary becomes much more advanced; sentences are longer and more complex. At this stage, the deaf child cannot keep pace.

Left to his own devices, the deaf student gets very little meaning out of what he reads. It is at this stage that the teacher finds that he is converting every reading lesson into a language lesson, teaching the child the language in the books. The child is not doing the reading himself, but he is with teacher help gradually improving his skill in language. The teacher hopes he will have enough vocabulary and effective control of English so that he can return to reading and translate written language into meaningful referents. Some students do progress to this point; too many do not.

Although the student need not necessarily convert written symbols into auditory symbols, his ability to take meaning directly from written symbols is limited. Whether or not written symbols are converted into oral symbols, these graphics cannot be interpreted without some kind of prior knowledge of word meanings. Apparently, linguistic skill, however acquired, must be present before reading can be tackled effectively.

In all areas of the curriculum it must be remembered that the student is not so much hard of hearing as he is hard of thinking. The student who cannot hear well cannot think well.

Once the hearing impaired child reaches the intermediate level he enters a very critical period in the development of his education. Subject areas are more complex and studied in more depth. It is a time when these students will be following the curriculum developed for the "normal public school." While emphasis will be more on the subject matter, the student will still be continuing practice in oral communication.

The teaching of science to the deaf will have to take these factors into account; (1) one avenue of environmental information is severely restricted or not at all available; (2) there is a normal range of intellectual ability, yet learning by reading or being told is severely limited; (3) it is necessary to start from concrete materials, moving slowly towards abstractions; and (4) there is a wide range of individual abilities even in so called homogeneous groupings.

These factors confront the teacher when he tries to have the students work in the area of Science. The methods he will use must be more concentrated in the area of the concrete where the materials are worked directly upon by the children. The modern elementary science programs recognize that hearing children cannot learn about science by only reading about it. These programs can provide an ideal source of materials for deaf students. Both the deaf child, who struggles to read and acquire language, and the hearing child, who can read and has language, need a program based upon direct involvement with materials.

The current trend in American science education puts heavy emphasis on direct laboratory experience. For deaf students this need is even greater. Time must be set aside for the deaf student to handle materials that will help him see relationships that will build receptive concepts. Science for the deaf student can be the door that opens on to understanding his environment. Science lessons should be built around material that is readily available and that can be manipulated. Pictures are helpful as an alternative, but the more tangible an item, the more impact the words of the lesson have that are taking place.

Class size for the handicapped is regulated by the State Department of Instruction to 8-10. Most handicaps require that the instruction provided be specialized in nature, and the class size kept small enough so that optimum condition for learning are present. In addition to clinically trained instructors, supportive personnel such as speech and hearing therapists, psychologists, guidance counselors, nurse, and instructional media specialist, associate teachers of the deaf are necessary to the staff of the Sterck School for the Hearing Impaired.

By using the proposed staff organization, in which teacher strengths and interests will be fully utilized, more individual work with students can be accomplished. In an area such as reading the associate teacher can be working on study skills and work habits, the supervisor could be with a group developing appreciation of literature, and the aid could be doing drill work. At other times students weak in the area of reading could be receiving individual instruction while the others are working on language or social studies.

The science emphasis while following the "normal hearing" school will be approached mainly through team units and rewritten team activities. The main lesson will be introduced by the team member who feels strongest in this area. Individual instruction by all members will then be given to the students needing extra instruction.

One of the main objectives of our school program is to integrate as many of our students as is educationaly possible. Once again by utilizing all members of the team a closer working relationship can be accomplished with the "normal hearing" classroom teacher. Different members of the team can work with the "normal" teachers to better meet the needs of the integrated students. Therefore, when these students return to the class they will be able to receive reinforcement in the academic areas covered in the "normal" situation.

CURRICULUM CHARACTERISTICS

The following is the content material to be included in the teaching of Science, Music, Physical Education, Reading, and Arithmetic in the Margaret S. Sterck School.

1. *Science:* Visual aids, constituting a great part of a hearing impaired child's means of learning, can be organized in a laboratory science program. The elementary school, with the proper preceding background, should be able to continue in a curriculum which includes the study of three areas: the Universe; Matter and Energy; and Living Things. These three areas, presented in the following manner, would bring to the elementary child the opportunity to explore areas in which he might, and should, at this age, have some curious interest.

   The *Solar System*, covering a study of the sun, other planets, the moon, and the earth, will give the child the necessary knowledge of the world which surrounds him. Study of the *Seasons* should make more clear to him the reasons for various weather aspects and their effect on man.

   Matter and Energy divided into two areas, Mechanical and Electrical, give opportunity not only to familiarize the child with the use of mechanical and electrical facilities, but should be presented in such a way as to arouse the curiosity that will guide or push him into further and deeper interests and explorations.

   All children are interested in living things. Beginning with very simple plant and animal life and expanding in the areas of construction (parts), reproduction and growth needs, the child acquires an overall knowledge of life in general.

2. *Music·* An outlet for pent-up emotions and relaxation for all children is provided in a music program. At appropriate levels we will begin to introduce a musical vocabulary so that the child knows what is meant by "tempo" and various other musical expressions. He will begin to acquire knowledge of the "beat" as "meter" and be able to distinguish between instrumental families, voice, and rhythm patterns.

Rhythm will be an important part of his learning. It will be an aid in establishing the balance so lacking and so important in the hearing impaired. Review of basic activities will be important. This, followed by the teaching of such dances as the Polka, Square Dance, and the encouragement of free interpretive dancing will help stimulate the balance so necessary.

He will also learn to read music using charts provided; to become aware of meter as such; to learn musical signs, staff, etc.

The toy band will provide opportunity to learn to play instruments involving use of previously learned factors as rhythm, reading music, etc.

Action songs and games will round out a program including all the basic fundamentals.

There should be some time allotted for Creativity which involves all activities in the preceding areas.

A very brief and simple introduction to composers will give them a well-rounded outlook.

3. *Physical Education:* Physical Education plays an important role in the development of all children. In the area of the elementary child the program should include first, play which is exuberant, experimental, dramatic and make-believe. This would include games which are fun yet rules must be observed and followed. Equipment must be handled proficiently. Stunts and tumbling bolster ego because an "I can do anything" feeling is satisfied. Dance and rhythm may also be touched upon in physical education.

   It is fun to make believe to be someone or something else. Time should be provided to just dash about for sheer enjoyment. Time for playing with tricycles, roller skates, scooters and other toys of transportation devices will give the child a chance to use different parts of the body in different ways, to experiment with space and to use imagination.

   As the elementary child reaches the higher age bracket of his area, all work and play should be developed into more complex activities and more formal instruction. He does not just run around and jump, but applies all this to more formal games, team competitions and practice to develop skills. Stunts and tumbling will develop body areas necessary at this age. Rhythms and dances will continue to be enjoyable.

4. *Reading:* The specific aim of any reading program is not only to teach the child to read but to encourage the desire within the child to want to read. He must master vocabulary and to do this a basic program must be followed. This program includes:
   Teaching consonant sounds (beginning and ending)
   Teaching sound symbol relationships
   Phonetics in every area
   Development of more complicated sentences following non-language rules
   Familiarity with at least one response for all letters
   Speaking and reading in clear sentences to the best of ability
   Application of sound symbol techniques learned to other areas.

   These objectives could be achieved by use of the Fitzgerald Key, Bulletin Board notices, pictures, objects charts, phonetic drill and dramatization, etc.

   He should be provided daily with much easy reading material which is available to him at all times.

5. *Arithmetic:* A lower level elementary program should develop (1) number concepts and gain number consciousness as: count by 1 to 100 as needed; read and write numbers to 20; counting by 5-10 to 100; read calendar dates; count, read and write money as needed; recognize oral and written expressions of simple fractions.

   (2) Develop the idea of addition and subtraction; recognize and use language symbols needed; single addition column to 18; two column addition and subtraction (no carrying or borrowing.)

   (3) Begin multiplication and division by grouping and separating, concrete experiences involving doubles. Begin development of measuring consciousness. Give concepts of value, size, and distance. Comparisons (as, larger, smaller, longer, shorter, etc.) Develop through use familiarity with coins, capacity, weight, time, and measurements.

   (4) Recognize common geometric forms such as wheel, ball, block.

   (5) Fractions (½, ¼; halves of numbers to 10). One step reading problems.

At the upper level of this area (1) extend number concepts and understanding of place value as needed; (2) read and write numbers to 1000; learn Roman numerals and dollar signs and fractions as needed; (3) count by two's five's, and ten's; add three's and four's; (4) understanding of meaning of measurements (linear, liquid and dry); (5) extension of addition to carrying in three columns and extension of subtraction to borrowing, using in all situations, zero, etc.; (6) teaching the principle to checking all problems; (7) development of concept in multiplication of "times as many" and groups in division using uneven division combinations; (8) enlarging concepts of value, size, distance, telling time, reading temperatures; (9) expanding use of fractions, reading problems, value, size, distance and measures as needed; (10) stress on reading problems using typical situations.

The following are the areas of emphasis for the above-described subject matter areas.

In the area of Science, emphases are placed on the development of the power of observation and its importance to our understanding and accepting of the world around us; working for an effective development of manual dexterity and balance through the use of science equipment; the instilling within the child of knowledge of the availability of the wealth of material at hand around us; and the development of self-efficiency and teamwork.

In the area of Music, emphases are placed on instilling in the child the importance of listening and the pleasure that is derived from same; rhythm and the importance it plays in the development of coordination, poise, balance and in minimizing shuffling; instilling in the child the enjoyment of music and how much pleasure awaits him in his music world.

In the area of Physical Education, emphases are placed on the importance of learning the easy before trying the hard; manipulation rather than proficiency; skill in locomotor movements and creating an atmosphere of freedom of expression; and the need of equipment which gives the child practice in acquiring specific skills and at the same time contributes to the development of strength, coordination, balance, agility, courage and an awareness of self with consideration and respect for others.

In the area of Reading, emphases are placed on the three following areas: (1) the ability to comprehend facts, independent thinking and evaluation; (2) vocabulary development and word mastery; and (3) the ability to find the main idea of selection; to be presented in such a way that desire to read is not destroyed and that the child is stimulated to be aware of the pleasure reading gives.

In the area of Arithmetic, emphases are placed on the development of knowledge and understanding of process, facts, and concepts; the development of independent study habits; and the development of attitudes that lead to confidence and independence; and the role of arithmetic in society.

Concluding Statement:

The areas of Social Studies and Art were not directly dealt with during this workshop. These areas should be developed under the direction of division chairmen and included in the curriculum Studies.

B. Maximizes

Each consultant was requested to apply the following nine (9) maximizes to his specific subject area.

STERCK SCHOOL PROJECT – SUMMER 1968

Guide for academic area position papers – applying the
disciplines to problems of the hearing impaired

A. *What in your subject area can be used to maximize –*

1. Visual learning (independent of auditory reinforcement)
2. A sense of physical balance and coordination
3. Dramatization of personal, group, or literary experience
4. Written and/or pictorial communication facility
5. Rhythmic sensation ranging from music to voice discrimination
6. Non-verbal communication beyond reading (gestures, facial expressions, etc.).
7. Technological extensions or magnifications of the normal senses (everything from typewriters to telescopes)
8. Independent access, retrieval, and evaluation (including material suitable for residence hall use)
9. Coordinated use of two or more senses (for example, seeing a radar profile on a T V screen

B. *What possibilities, if any, do you see for profitable use of –*

1. Typewriters
2. Telegraph (Morse Code)
3. Polaroid cameras
4. Microscopes
5. Telescopes
6. Motors, electric or gasoline
7. Locomotion devices (from electric golf carts to airplanes or driver training simulators)
8. Computers
9. Jukeboxes
10. Television
11. Movies
12. Film strips
13. Braille
14. Animals (Pets)
15. Sign language

16. Lip reading
17. Chemicals that work
18. Mechanical drawing
19. Abstract painting
20. Cartooning
21. Acrobatic dancing
22. Organs
23. Electric guitars
24. Drums
25. Colored Lights
26. Temperature variation and control
27. Gauges and measuring devices
28. Calculators
29. Adding machines
30. Guns (Yes, consider things even this far out!)
31. Tools
32. Sewing machines
33. Stoves
34. Others (continue looking for things normally associated with other purposes)

C. *Do you see any areas of needed invention?*

(Especially possible combinations or adaptations of existing technology)

V. SUPPORTIVE SERVICES

Role of the Special Supporting Personnel

Essential to the Sterck School for the Hearing Impaired program are certain specialized personnel functioning as part of the school staff, including the following: speech and hearing clinician, school psychologist, guidance counselor, librarian, instructional media specialist and nurse. These people must be able to see their role in functioning as a cooperative aid in improving the total school program. They should be able to work well with people, be optimistic, dedicated, imaginative, and able to encourage teachers to use their specialized talents.

A full-time nurse is responsible for the over-all physical well-being of the students at the Sterck School for Hearing Impaired. Since hearing-impaired persons have a problem with balance and coordination and are thus more accident-prone than normal hearing persons her role is an active one.

A full-time speech and hearing clinician is vitally important to a school such as the Sterck School for the Hearing Impaired. Such a person may give audiologic tests, interpret them and is directly involved in developing language and speech. The classroom teacher and or an aide should work closely with the speech therapist so that (through) interaction skills taught will be strengthened through practice and drill. As the school grows the speech and hearing clinician's job should be divided into two, an educational audiologist and speech clinician, to provide maximum services to pupils.

The guidance specialist will perform many services. Since guidance infers helping an individual know himself and planning according to the information gained about that individual, one service is a testing service. An individual inventory, consisting of putting down on paper everything pertaining to himself – age, family, work experience, education, plans for vocation, past subjects and grades, likes and dislikes, may be another service. Counseling through individual interviews assists in resolving problems, establishing realistic goals, and planning a course of action. Acting as a liason between home and school may fall in his realm requiring the guidance specialist to make home vists within the state. Another service is that of providing information. The requests may come from students and may be educational or occupational in nature or they may come from staff members, parents, prospective employers, officials of other schools and agencies. Yet another service will be vocational service when the Sterck School students near completion of their formal education – testing for aptitudes in various vocations will precede their high school education. There should also be a follow-up service of all graduates from the Sterck School for Hearing Impaired. In performing so many services an aide to the guidance specialist seems necessary.

The school psychologist is a specialist trained in working with those students with mental or behavioral characteristics which interfere with their development. Society demands that a deaf child conform to our norm for hearing persons and in trying to do so the child sometimes develops emotional troubles. The guidance specialist may uncover such a problem but the school psychologist is the person who will work with the student and the school personnel in resolving it. During the first year of operation the Sterck School will have a part-time guidance counselor and part-time school psychologist. It is hoped that full-time personnel may be obtained in these two areas in the future.

The school library is a program of services built around an organized collection of all learning resources – printed materials, audio-visual aids, models, pictures, charts, maps, all cross-indexed in a catalog. The ultimate objective is to teach students how to use the library to fulfill their needs and interests in learning.

Ideally there should be room for group work; for individual reference work, for viewing and listening; for professional materials and a work area for teachers; for browsing.

Service for children is perhaps the most important aspect of a school Instructional Media Specialist's function. The library should provide materials for meeting the individual needs of students. The Instructional Media Specialist is the key person in organizing all these materials and making them available to the teacher at the time and place they are needed.

Scheduling should remain as flexible as possible. By posting a weekly "mod" schedule of X minute blocks of time any teacher may reserve the library for her class by placing her name in one or more blocks on as many days as she wishes. The Instructional Media Specialist may suggest that classes requiring certain library skills be scheduled and keeps a yearly calendar record of which specific skills were taught each class. Teachers are free to send individuals or small groups at any time with specific problems or areas of the curriculum to explore. The less structured the library program is, the more comprehensive the service it can give, assuming that the Instructional Media Specialist still retains the responsibility of seeing that all are served equally and adequately.

The following duties should be true of all supportive personnel:

1. Shall serve as advisors to the principal for their respective area of operation.
2. Shall keep the principal informed of the progress being made in their respective area of specialization.
3. Shall share freely their ideas for cooperative improvement of the total school program.
4. Shall work within the framework of the duties assigned to them by the principal.

5. Shall serve on committees assigned by the principal.

6. Shall work to help evaluate and determine progress being made in the school program.

The common denominator of the five special supportive personnel is their more direct, one to one relationship with the pupils. Sharing the knowledge gained should be an interaction of this team. A services coordinator would facilitate such interaction with the faculty members.

VI. NEW PROGRAMS

A. Evening

Dimensions of the Residence Hall Evening Program 1969-1970

Scope

1. Five-day program, Kent and Sussex county students spend week-ends at home.

Participation

2. Non-residential students may also participate (if able to transport themselves.)

3. For special purposes and functions students from the adjacent elementary and middle schools may also participate; conversely, Sterck students may join the regular schools in appropriate evening programs.

4. All evening programs should be voluntary, at least in part, with care being taken to leave some totally free, uncommitted, leisure time. (Age makes a difference here, however.)

Time

5. The hours involved are approximately 7:00 – 9:00 pm Sunday through Thursday.

Staffing

6. One member of the regular faculty should direct the program, or it could be shared by two members, a man and a woman, working 4 hours extra (each) per week. Such services would, of course, be compensated.

Finance

7. The staff directors would have a small contingency budget for, a) bringing in special helpers, b) admission to special community programs, and c) transportation to off-campus events.

Volunteers

8. Sponsorship, especially for the younger children, would be sought on a non-paid basis from civic groups like the Junior League or interested churches. Training institutions are also a possibility for certain kinds of counseling and tutoral help.

Resources

9. The evening program should have direct access to the library, individual retrieval devices such as projectors, TV, record players, etc.

Activities

10. Illustrative activities that might be sponsored are listed as follows:

    a. The proper use of leisure time, by this a child should learn to entertain himself in a wholesome manner.

    b. A student Work Fund where the children work at jobs on campus for needed spending money, clothing, etc.

    c. Dances held, some of which are planned in advance and some impromptu.

    d. Calling hours for friends, relatives and on-campus dating.

    e. A Student Council to help with discipline and student conduct.

    f. Swimming

    g. Intramural sports program

    h. Week-end outing for Scouts

    i. Saturday trips to the beach

    j. Trips to museums, historic places of interest.

    k. Club time such as knitting, flower arranging, cake decorating, furniture refinishing, dramatics.

B. Nursery

The first phase of the new school facility will provide services to pre-school children ages 4 – 6. Findings have substantiated the need for a continual program to be initiated at 18 months so that the hearing impaired child will be better prepared for pre-school entrance. Parents will accompany the children. Early parent education will be provided at this time. It is projected that this program can be carried out in the new residence facility.

C. Pre-Vocational

By the time the hearing impaired child reaches the age of 12-14 years, one is fairly well able to define whether this child has higher academic possibilities or not. Continual assessment needs to be made as to which direction the child is heading; either Christiana High School for the academic bound student or the New Castle County Vocational High School for the vocationally oriented student. If during these years of 12-14 an area of observation and assessment can be provided within the confines of the Sterck School property more accurate placement can be obtained in the vocational high school.

In other words, an area needs to be specified in the Sterck School where a child vocationally oriented could experiment in the fields of woodwork, electronics, graphic arts, etc. This does not call for elaborate equipment but possibly cubicles of interests where a student can move from one specialty to another. With control, the staff could be making some valuable observation as to the students capabilities and inherent talents. These observations would be forwarded to the vocational high school where development of these talents is fulfilled.

VII. DECISION MAKING

The Margaret S. Sterck School for the Hearing Impaired is the agency authorized by the Delaware State Department of Public Instruction to educate the Hearing Impaired or Deaf in the State of Delaware.

This facility is financed 100% by state funds and has been administratively assigned, to the Newark Special School District.

Current operating expenses are shared by local school districts throughout the state of Delaware.

Thus since the Newark Special School District and its board are the direct governing body, the following District philosophy applies to the Sterck School.

A. Philosophy of the Newark Special School District

The Newark Board of Education believes that each pupil in the School District is entitled to the opportunity of receiving an education and that the instructional program should be on an individual basis, meeting the needs of each child. It directs its administrators to insist that each teacher receive each child at his instructional level and take him as far as his intellectual potentials will permit during the time he is under his or her instructional jurisdiction.

We believe moral and spiritual values should be emphasized at all levels. We feel strongly about this because we realize that by observance of moral and democratic principles this nation was built, and only by preserving and following them can this nation survive.

We believe that the schools should help each individual to develop respect for the dignity and worth of people regardless of race, religion, nationality, and socio-economic status.

We believe that the schools should acquaint individuals with educational and vocational opportunities and should develop in them an appreciation for all kinds of work.

We believe that the curriculum is a coordinated series of experiences, continually changing according to the needs of the maturing individual and the demands of our society.

We believe an effective and flexible curriculum utilizes all community resources, both those within the schools and those outside the schools.

We believe that responsibility for a public school system is a joint one, shared by the community, the state, and the nation.

We believe that all students need to learn to live with other human beings, to achieve and maintain sound mental and physical health, to learn to live in their national and scientific environment, to learn to think logically and express themselves clearly, to prepare for work or for further education or for both, to learn to use their leisure time well, and to learn to live esthetically.

We believe the policies and rules and regulations should be consistent with the District's statement of philosophy.

We believe that the Newark Board of Education should formulate the policies, rules and regulations applicable to the efficient operation of the schools in the Newark Special School District and appoint a superintendent as the chief school executive to administer these policies.

We hold that a free society, composed of thinking creative individuals, is the highest estate of man. If it is to survive and prosper, such a society must have wise and imaginative leadership, and its individual citizens must be able to make sound, informed decisions. Thus, the free society demands the utmost intellectual development of every individual. Education, as an institution of this society, is committed to these ideals.

The essential attribute of Man, and the one which sets him apart from the lower animals, is intellect. Education is the one institution whose primary concern is the development of this intellect, toward the end that every man may attain his greatest potential as a rational being. This shall be the primary concern of the Newark School System.

Man also develops physically, socially, politically, vocationally, spiritually, and in other ways. Education shall also foster these while recognizing that other institutions such as the church, the home, government, and society itself have the major responsibility in these areas.

Substantial differences in program, staffing facilities, supervision, etc., in a particular school from District standards shall be done only by the approval of the Superintendent and the Board of Education.

B. Principal

The principal is essentially the chief school officer for the Sterck School for Hearing Impaired. It is his responsibility to:

a. Act as liaison between the State Department of Public Instruction and the Newark Special School District Administrations.

b. Be the communicator between the Sterck School and the Newark Special School District.

c. Be the communicator between the Sterck School and the Delaware Council for the Hearing Impaired.

The principal is responsible for all persons assigned to the school and all school-related activities scheduled on the premises. In this respect it is necessary that the principal work closely with the administrative assistants of the superintendent, school lunch supervisor, cafeteria manager, maintenance department, and supervisor of custodians.

The principal is the professional and executive leader of the school and is largely responsible for its educational program. He must organize the school and its employees into an efficient, democratic, and cooperative institution of dependable, professionally trained educators and skilled workers. His first function is the improvement of instruction. By his own self-control, thoughtfulness, consideration, courtesy, and friendliness he sets the pattern of human and professional relations through which the needs of children will be most fully met.

C. Duties and responsibilities of instructional personnel:

Teachers shall be under the general supervision of the superintendent of schools and directly responsible to the principal of the school to which they are assigned, and shall perform those duties required by law, by contract, and by the policies of the school board as well as those duties and responsibilities established by the superintendent of schools and principals.

Teachers shall familiarize themselves with the policies and regulations of the school board. The superintendent of schools and the principal shall observe and enforce such policies and regulations.

Teachers shall devote themselves faithfully and exclusively to the performance of their duties during school hours.

Punctuality and regularity are required of all instructional personnel in attending classes, meetings and conferences and in keeping other school and professional appointments.

In all professional and personal relations teachers shall be expected to observe a course of conduct consistent with the National Education Association Code of Ethics.

Teachers shall be responsible for:

Educational advancement and growth in their classes.

Development of good character and desirable attitudes of self-discipline among the pupils.

Protection of the pupils' safety and health.

Maintenance of discipline and good order in classes and elsewhere throughout the school buildings and grounds. Teachers should administer such discipline within the schools as would be exercised by a kind, firm, judicious parent in the home. All cases in which corporal or other severe punishment seems called for shall be referred to the principal.

Proper protection and care of textbooks, furniture, equipment, supplies, and other school property.

VIII. THE EVOLUTION OF NEW ROLES

The Sterck School project proposes an eighty percent investment in its first year (1968-69) in the initiation of two specific new roles – "Supervising Teacher of the Deaf," and "Associate Teacher of the Deaf." Additionally, it envisions a shift in emphasis in its teacher aide program from the under-trained motherly type to more diversified, colorful kinds of talent now being inadvertently excluded.

This constellation of roles would appear to be relatively easy to set in motion. However, just the opposite is expected. Schools for the deaf have become, in tradition, a potent merger of (1) clinical attitudes and methods associated with the fields of medicine, psychology and remedial reading, and (2) the exaggerated autonomy of the teacher in an elementary school classroom which is set up on a "self-contained" basis. The reduced pupil-teacher ratios in such programs serve an obvious useful purpose but nevertheless remove all of the pressures which have fostered cooperative teaching in regular schools.

It is, thus, logical to expect the following built-in impediments to the proposed changes:

1. Experienced clinical teachers who simply see no reason why they can't keep doing a good job alone, especially in an attractive new facility.
2. Staff inexperience, and sometimes shocking lack of contact, with recent cooperative teaching patterns developing outside the field of special education.
3. Staff personality orientations – the accident of selection and preparation criteria – which are more individualistic than cooperative; more remedial than developmental; and in most instances, insensitive to organizational phenomena which are perceived as administrative or pseudo-political rather than options of the professional teachers.

4. Associate teacher perceptions of "special education" being so special as to be an inhospitable setting for them to be successful and fully-accepted practitioners.

5. An almost complete centralization of decision-making in the office of the principal of the "Special School," following the precedent of medicine and thereby negating the development of supervisory and curriculum planning leadership on lower echelons.

6. Curriculum commitments which are amazingly narrow in their focus on language remediation, and shallow in their exposure of children to the exciting areas of knowledge to which communications skill is ultimately supposed to give them access.

Breaking such a pattern calls for "strong medicine" in the form of life lines to university preparation programs, as well as temporary subsidies to (1) introduce the "associate teacher" roles in sufficient quantity for effectiveness and fair evaluation, and (2) demonstrate the supervisory and curriculum leadership opportunities available to authorized subunits of the faculty.

Regarding the "preparation" need, the most critical concern is the enrollment of selected, fully-certified teachers of the deaf in on-the-job supervisory internships. The University of Delaware offers an approved sixty-hour program in educational administration which has a supervisory training option. Basically, the candidates from special education would have a personalized program but they would be required to fill gaps in their preparation in such critical formal courses as curriculum design, supervision and school organization.

The "associate teachers" would be similarly trained on the job but mainly by their "Supervising Teachers of the Deaf" rather than University personnel. With a more precise definition of their personal needs certain special education courses might be recommended. However, under no circumstances would their arts and sciences talents be permitted to be snuffed out by clinical training. Their continued formal education would thus be channeled into curriculum applications of special academic interests rather than intensive study in special education.

Both roles would be supported by a rather impressive array of temporary consulting services designed to guarantee success of any and all new curriculum venture. The whole operation would thus become task-oriented – incidentally, almost always the most effective form of academic preparation, as well as the best setting for defining complimentary and interdependent professional roles. A role is, in the final analysis, the result of purposeful and practical behavior – not just an academic job description.

Patterns of teaming will need to be hypothesized and then tried out. Specifically, teachers will need to define the roles which they can still best perform alone. They should then identify activities in which two or more like groups could profitably engage, say two primary groups of ten students each with their respective teachers and aides.

Finally, special functions can unite different groups because of the interests and/or needs of specific students. These would, in many instances, involve the services of the "associate teachers" as well as special clinical services.

Teaming would be directed at four basic purposes:

1. The consolidation and maintenance of a useful academic resource (such as a learning center in the arts).

2. The creation and application of a given clinical service. (For example, self-concept role studies via E T V)

3. The extension to larger numbers of students of a valued personality resource on the faculty, and

4. The clustering of appropriate staff members for purposes of curriculum planning and program control.

Evaluation is important in a change of the type proposed, however, it must be of the right type or measurement accidentally imposes its own purposes rather than assessing someone elses. In the first year of a staffing innovation where there is a large trial and error factor, descriptive and projective techniques are more appropriate than experimental designs. Teacher logs are especially useful in such instances as are the perceptions which teachers have of each other's roles. For the unique setting of the Sterck School, special instrumentation would have to be devised, possibly relying most heavily upon: (1) Q-sort descriptions of expectancy and practice, (2) behavior logs, and (3) "executive assessments" by informed observers of specific kinds of changes.

A. Projected Guidelines for New Roles

1. Supervising Teacher of the Deaf

   a. His major responsibility is for the direction of the work within his division to insure the best possible performance of the division in the achievement of its objectives. He is directly responsible to the principal. He shall carry almost a full teaching load.

   b. He will assist in organizing the program of instruction initially to make the fullest use of the talents and energies of each division member and reorganizing the instructional program as necessary, he shall arrange for each division member to observe other members of the division working with children and provide them some time during the day for preparation and planning.

      1) Assist in developing a system of communication among divisions members and other divisions.

      2) Serve as chairman for meetings of the division.

      3) Initiate and coordinate the development of long range weekly and daily schedules for the division, outlining assignments for teaching, planning, etc.

      4) Evaluate the division activities and progress and make recommendations to the principal regarding personnel, facilities, equipment and supplies.

      5) Set up a systematic method of planning which will include all division members.

      6) With the division group members determine the placement of pupils.

      7) With division members determine when and how subjects may be integrated within the framework of the district policy or curriculum policy of the school.

8) With division members set up standards of pupil behavior including the understanding of each division member's responsibilities and duties, the supervisor should support other members of the division in interaction with pupils.

9) Provide leadership and establish a spirit of cooperation and team effort.

10) To assist the principal in the supervision of associate teachers, aides, etc., in accordance with procedures–established by the principal and administration.

11) Assist in establishing a system of evaluation, pupil growth and progress, reporting to parents including parent conferences, consistent with the established policies of the school and district.

12) To be receptive to new ideas and experimentation on the part of the administration and division members providing such experimentation is well thought out and carefully prepared.

13) To participate in meetings and share experiences with other division leaders and members when called upon to do so.

2. Associate Teacher for the Deaf
   a. Should be responsible for teaching language development and to see that level of subject matter is consistent with students' language level.
   b. Should have joint seminar sessions with associate teachers.
   c. There should be no attitude of academic superiority in relating to the associate teachers.
   d. Should be abreast with current educational practices in the field of education for the Deaf.
   e. Consultation with library and media specialist.
3. Associate Teachers
   a. Must be abreast with current "normal hearing" educational concepts.
   b. Should consult with associate teachers of the Deaf and supervising teachers of the Deaf on materials and approaches that maybe applicable to the education of the deaf.
   c. Must constantly remind faculty that we are dealing with a whole child. Needs to keep the faculty informed as to how the hearing impaired child correlates with the "normal hearing" child in the present day society.
4. Teacher Aides

   (Refer to Sterck School Aide Handbook)

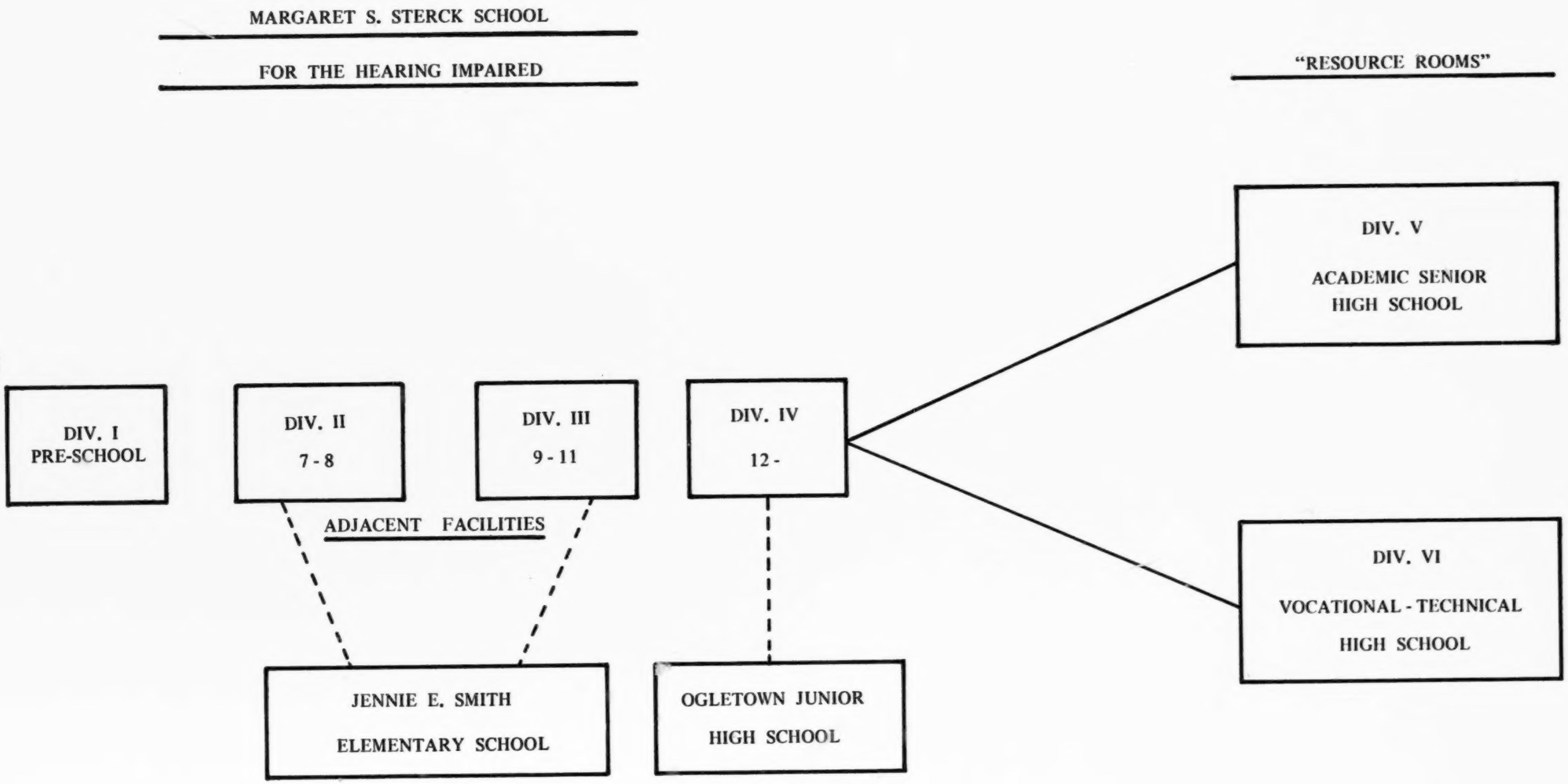
B. Summary Statement

These proposed new teacher roles are being further developed, and it is hoped will be tested through a Title III project. The proposal is being written at this time and if all goes well should be in experimental form early in 1969.

The consultants and staff have developed the following curriculum outlines for the various subject areas. The content will proceed from an overview of all divisions and subject areas to the actual division outlines.

CHART III

DELAWARE'S PLAN FOR EDUCATION OF DEAF/HEARING IMPAIRED


MARGARET S. STERCK SCHOOL
FOR THE HEARING IMPAIRED
"RESOURCE ROOMS"
DIV. V
ACADEMIC SENIOR HIGH SCHOOL
DIV. I
PRE-SCHOOL
DIV. II
7 - 8
DIV. III
9 - 11
DIV. IV
12 -
ADJACENT FACILITIES
DIV. VI
VOCATIONAL - TECHNICAL HIGH SCHOOL
JENNIE E. SMITH
ELEMENTARY SCHOOL
OGLETOWN JUNIOR
HIGH SCHOOL

IX OVERVIEW OF FOUR DIVISIONS

SCIENCE

Division I

- I. The Universe
    - a. Seasons
    - b. Weather
- II. Living Things
    - a. Plants and animals
    - b. Health
    - c. Safety

Division II

- I. The Universe
    - a. The earth
    - b. Space
- II. Matter and Energy
    - a. Air
- III. Living Things
    - a. Generalization
    - b. Plants
    - c. Animals
    - d. Health and Safety

Division III

- I. The Universe
    - a. The Solar System
    - b. The Seasons
- II. Matter and Energy
    - a. Mechanical
    - b. Electrical
- III. Living Things
    - a. Plants
    - b. Animals

Division IV

- I. The Universe
    - a. Weather
- II. Matter and Energy
    - a. Mechanical
    - b. Magnetism and Electricity
    - c. Fire and its Prevention
- III. Living Things
    - a. Animals
    - b. Human body and How it Works

MUSIC

Division I

- I. Listening
- II. Rhythm
- III. Reading music
- IV. Playing Instruments
- V. Singing
- VI. Creativity

Division II

- I. Listening
- II. Rhythm
    - a. Review basic rhythmic activities
    - b. Teach basic dance steps
- III. Reading Music
- IV. Playing Instruments
- V. Singing
    - a. Action songs
    - b. Singing games
    - c. Christmas carols
- VI. Creativity

Division III

- I. Listening
- II. Rhythm
- III. Reading music
- IV. Playing Instruments
- V. Singing
- VI. Creativity
- VII. Composers

Division IV

- I. Listening
    - a. Vocabulary
    - b. Meter
    - c. Discriminate and differentiate instruments, voices, moods, rhythms
    - d. Appreciate
- II. Rhythm
- III. Reading music
- IV. Playing Instruments
- V. Singing
- VI. Creativity
- VII. Composers

PHYSICAL EDUCATION

Division I

I. Survival Activities
II. Skills on large playground equipment
III. Fundamental movements
IV. Non-locomotor movements
V. Self testing activities or stunts
VI. Sport Skills
VII. Self help skills
VIII. Beginners Tumbling
IX. Eye movement exercises
X. Movement exploration
XI. Creative rhythms
XII. Balancing (for games and testing)
XIII. Creative play
    a. Story plays
    b. Low organization games
XIV. Frostig coordination exercise

Division II

I. Games
    a. Movement skills
    b. Relays
    c. Classrooms games
II. Rhythms
    a. Continue basic locomotor skills
    b. Continue basic non-locomotor skills
    c. Ball bouncing rhythms
    d. Action songs and stories
    e. Movements to rhythm instruments
    f. Simple folk and square dances
    g. Creative rhythm
III. Self-testing
    a. Warm-up exercises
    b. Stunts and tumbling
    c. Balance
    d. Movement exploration
    e. Indoor apparatus
    f. Outdoor apparatus

PHYSICAL EDUCATION (cont.)

Division III

I. Sports
    a. Soccer
    b. Football
    c. Basketball
    d. Volleyball
    e. Softball
II. Self-testing Activities
    a. Stunts and Tumbling
    b. Apparatus
III. Rhythm

Division IV

I. Sports
    a. Soccer
        1. Skills
        2. Lead-up games
    b. Football
        1. Skills
    c. Basketball
        1. Skills
        2. Lead-up games
    d. Volleyball
        1. Skills
        2. Lead-up games
    e. Softball
        1. Skills
        2. Lead-up games
    f. Suggested sport areas
        1. Tennis
        2. Bowling
        3. Wrestling
        4. Golf
II. Self-testing
III. Rhythms
IV. Movement Activities

MATH

Division I

- I. Sets
- II. Number – numeral
- III. Order and relation
- IV. Readiness for addition
- V. Readiness for subtraction
- VI. Geometry

Division II

- I. Sets
- II. Numbers and numerals
- III. Place values
- IV. Order and relation
- V. Addition and Subtraction
- VI. Fractions
- VII. Measurement
    - a. Money
    - b. Time
    - c. Linear
    - d. Liquid
    - e. Weight

Division III

- I. Extensions of Sets
    - a. Sets
    - b. Equivalence – inequivalence
- II. Property of the real numbers
    - a. Properties of addition
    - b. Addition of whole numbers
    - c. Subtraction of whole numbers
- III. Place value and place value notation
- IV. Geometry
    - a. Introduction to points, lines and line segments
    - b. Geometric figures
- V. Measurement
    - a. Money
    - b. Time
    - c. Linear
    - d. Liquid
    - e. Story problems
- VI. Multiplication facts
    - a. Property of multiplication
    - b. Multiplying by hundreds, tens and ones.
- VII. Introduction to division – definition
    - a. One – and two – digit division with zero remainder
    - b. Relation to subtraction

MATH (cont.)

    - c. Inverse operation
- VIII. Factoring
    - a. Factors and products
    - b. Zero through five as factors

Division IV

- I. Sets
    - a. Set notation and vocabulary
    - b. Types of sets
    - c. Numbers
- II. Fundamental operations with whole numbers.
    - a. Addition
    - b. Subtraction
    - c. Multiplication
    - d. Division
    - e. Rounding
- III. Factorizations
    - a. Prime numbers
    - b. Composite numbers
    - c. Complete factorization
- IV. Rational number system
    - a. Addition
    - b. Subtraction
    - c. Multiplication
- V. Geometry
    - a. Lines
    - b. Planes
    - c. Closed curves
    - d. Angles
- VI. Extension of definitions and identification of geometric figures
- VII. Emphasis throughout
    - a. Story problems
    - b. Puzzles
    - c. Games
- VIII. Logic
    - a. The use of logical statements
    - b. Truth tables
    - c. Flow charting
    - d. True and false statements

READING

- I. Objectives
- II. Programs
- III. Skills
- IV. Evaluation
- V. Summary

X. DIVISION CURRICULUM OUTLINES

Division I

SCIENCE

I. Objectives

1. To develop child's sensitivity to environment.
2. To look for cause and effect.
3. To form basic framework upon which the child can build future learning.
4. To develop an appreciation of the contribution of science to a better place to live.
5. To provide an opportunity to understand and appreciate man's struggle to discover the secrets of science.
6. To bring fragmentary and isolated impressions of the surrounding environment into an ordered state.
7. To develop an understanding of generalizations or scientific principles that can be used in solving their environmental problems.
8. To develop an interest in stimulating use of leisure time.
9. To develop within the child the following characteristics:
    a. open-mindedness
    b. ability to observe and deliberate and not jump to conclusions.
    c. to always seek a reliable source.
    d. to discourage superstition–realize there is a cause for everything.
    e. to be curious, careful and accurate.
10. To develop instrumental skills:
    a. reading
    b. discussion
    c. observation
    d. experimentation
    e. hypothesis-making
    f. use of imagination
11. To provide needed vocabulary and context that will lead to clarity of thought and expression.
12. Development of functional information
13. To develop a scientific attitude
14. To teach conservation as a pattern of behavior
    a. learn to think through to consequences
    b. place of content and meaning in developing responsibility
    c. development of responsibility for our environment

II. Skills

I. Universe

A. Seasons change

1. Leaves change colors
2. Snow falls in winter
3. Snow changes to water when it is warmed.
4. On cold days water changes to ice.
5. Boys and girls sled, skate, ski in winter.
6. We observe signs of spring.
7. Air is all around us.
8. Children fly kites in the spring.
9. Seeds grow in the spring.
10. Children swim in summer.

B. Weather changes
    1. Some days are rainy, some are clear.
    2. Sun is in the day sky.
    3. The moon is in the night sky.
    4. Stars are in the night sky.
    5. Sometimes we see the moon in the daytime.
    6. The stars are in the sky all the time.

Activities
1. Weather clock.
2. Observe the movement of the flag each day.
3. Observe temperature changes.
4. Watch for dew and frost.
5. Make use of window watching.
6. Pantomime weather and various activities associated with seasons and weather – actual weather forecasts.
7. Plan and maintain a science corner.
8. Introduce maps.
9. Make seasons and weather scrapbooks.

II. Living Things

A. Plants and animals
1. Plants and animals are living things.
2. New plants grow from seeds.
3. Some animals eat plants.
4. Plants and animals live everywhere on earth.
5. All animals move, eat food and grow.
6. Animals have babies like themselves.
7. Animals live in different places.
8. We find out about things we see, touch, hear, taste and smell.
9. Many plants and animals need our protection.

B. Health
1. Good food is important.
2. We wash regularly.
3. We wear clean clothes each day.
4. We learn to rest and relax.
5. We learn fair play.

C. Safety
1. We are careful near stoves, fires, etc.
2. We put our toys in safe places.
3. We learn to use our scissors, and other tools with safety.
4. We walk in halls and on steps.
5. We know our names, phone numbers and addresses.
6. We walk on sidewalks.
7. We look both ways before we cross the street.
8. We open and close doors carefully.

Suggested Field Trips – Visit a greenhouse – Visit a pet shop – University Farm.

Activities:
1. Plant a garden.
2. Observe plant and animal growth and development.
3. Set up an aquarium – a terrarium.

SCIENCE – *DIVISION I, (Cont'd)*

4. Maintain a bird feeding station.
5. Observe the environment around school.
6. Nature walks.
7. Study materials – textures – tastes – smells.
8. Sorting metals, wood, plastics, papers, rocks.
9. Comparing shades, sizes.
10. Make shadows, silhouettos.
11. Collections i.e. seeds, nuts, feathers, etc.
12. Magnify objects.
13. Distinguish environmental sounds.

Division II

SCIENCE

I. The Universe
    A. The Earth
        1. The Earth is round like a ball.
        2. The earth is large.
        3. The earth consists of land and water.
        4. Gravity holds things to the earth.
        5. The earth is an object in space.
        6. Up is away from the earth.
        7. Down is toward the earth.
        8. The earth is always turning.
        9. The rotation of the earth causes night and day
            a. It is daytime on the part of the earth that is turned toward the sun.
            b. It is nighttime on the part of the earth that is turned away from the sun.
        10. North is toward the North Pole.
        11. East is on your right when you face north.
        12. West is on your left when you face north.
        13. The earth rotates from west to east.
        14. The sun lights up the day side of the earth.
        15. When the sun shines on one side of the earth, it makes a shadow on the other side.
        16. The shadow of the earth causes nighttime darkness.
        17. The rotation of the earth measures the passing of time.
    B. Space
        1. The Sun
            a. The sun is round.
            b. The sun is very large.
            c. The sun is hot.
            d. The sun gives heat and light.
            e. The sun is always shining.
            f. The sun is a star.
            g. We see the sun in the daytime.
            h. The sun makes shadows when its light strikes something solid.
        2. Things far away look small.
        3. Things close to our eyes look big.

4. The Moon
   - a. The moon is round.
   - b. The moon is big.
   - c. The moon is smaller than the earth or the sun.
   - d. The moon gives us light that it gets from the sun.
   - e. Sometimes we see all of the lighted side of the moon.
   - f. Sometimes we see the moon in the daytime.
   - g. The moon is our nearest neighbor in the sky.

5. The Stars
   - a. There are many stars in the sky.
   - b. The stars are in the sky all the time.
   - c. We see stars at night.
   - d. We cannot see stars in the sky in the daytime because the sun is too bright.
   - e. Stars are far away.
   - f. The stars are farther away than the sun, so they look smaller.
   - g. Light comes from these stars.
   - h. Some stars appear to make pictures in the sky.

II. Matter and Energy

- A. Air
  1. Air is real.
  2. Air is in many places.
     - a. Air is in water.
     - b. Air is in soil.
     - c. We live in air.
  3. Air helps us.
  4. We need air to live.
  5. Air moves.
  6. Air moves things.
  7. Air can be used.
  8. Air takes up space.
  9. Air is a mixture of gases.

III. Living Things

- A. Generalizations
  1. Plants and animals are living things.
  2. All living things grow.
  3. Living things move.
  4. Living things reproduce.
  5. All living things need food and water.
  6. Living things are alike in many ways.
  7. Living things differ in many ways.

B. Plants

1. There are many kinds of plants.
2. Plants give us food.
3. New plants grow from seeds.
4. Seeds contain baby plants.
5. Plants need water.
6. Plants have different parts.
7. Plants have flowers.
8. Plants have leaves.
9. Plants have stems.
10. Plants have roots.
11. Flowers make seeds.
12. Insects help flowers make seeds.
13. Seeds travel in many ways.
14. Plants need food and water.
15. Plants grow and change.
16. Plants grow in different places.
17. Green plants need light.
18. Plants turn toward the light.
19. Leaves grow up.
20. Roots grow down.
21. Some plants grow from cuttings.
22. Some plants grow from bulbs.
23. Algae are plants.
24. Algae grow in sunlight.

C. Animals

1. Animals are living creatures.
2. There are many kinds of animals.
3. Animals have babies like themselves.
4. All animals need food, water, and air.
5. Many animals have hair on their bodies called fur.
6. The farmer takes care of his animals.
7. Children take good care of their pets.
8. We feed our pets and give them water.
9. Animals give us food.
10. Animals give us clothing.
11. Animals work for us.
12. Some animals eat plants.
13. Some animals eat other animals.
14. Animals live where they can get food and water.
15. Animals reproduce.
16. Some animals hatch from eggs.
17. Some animals are born alive.
18. All animals grow and change.
19. Many insects go through stages in their lifetime.
20. Amphibians go through stages in their lifetime.
21. Some animals have shells.
22. Mammals get milk from their mothers.
23. Birds are animals with feathers.
24. Animals and plants live together in an aquarium.
25. Animals and plants help each other in an aquarium.

D. Health and Safety

1. Health

  a. We take a bath or shower every day.
  b. We wash our hands before we eat.
  c. We wash our hands after we go to the bathroom.
  d. We brush our teeth regularly. We go to the dentist.
  e. We wash our hair regularly and keep it well combed.
  f. We wear clean clothes every day.
  g. We hang up our clothing when we take it off.
  h. We wear old clothes to play at home.
  i. We wear raincoats and boots in wet weather.
  j. We wear warm clothes when it is cold.
  k. We should take care of cuts and scratches.
  l. We take care of our hearing aids.
  m. We keep our ear molds clean.
  n. We eat a good breakfast.
  o. We eat different kinds of foods to keep us well.
  p. We should eat the proper foods.
  q. We wash vegetables and fruit before we eat them.
  r. We use good table manners when we eat.

2. Safety

  a. Riding the bus
  b. Getting on and off the bus
  c. Playing on the playground.
  d. Playing at home
  e. Safety at School
    (1) Walking in the halls
    (2) Fire drills
    (3) Civil Defense drills

SCIENCE

- I. The Universe
  - A. The Solar System
    - 1. The Sun
      - a. Composition (a star)
      - b. Size
      - c. Intensity or Brightness
    - 2. The Planets
      - a. Grouping of the nine planets
      - b. Composition
      - c. Source of Light – the sun
      - d. Revolution of the planets around the sun
    - 3. The Moon
      - a. Composition – covered with moon craters
      - b. Source of light – the sun
      - c. Revolution of moon around the earth
      - d. Phases – New moon, First quarter, Full moon, Last quarter
    - 4. The Earth
      - a. Composition – outer crust
      - b. Source of light – the sun
      - c. Revolution around the sun
      - d. Rotation on its axis – cause for day and night
  - B. The Seasons
    - 1. Four Seasons in the year – the changes taking place in Delaware because of the seasons.
      - a. The earth's revolution around the sun
      - b. The tilt of the earth's axis – The North Pole
      - c. The Equinox – Temperature change in Del.
Temperature change in parts of the U. S.
      - d. The Hemispheres – North and South
Seasons are not the same everywhere on earth.
    - 2. Effects of the four Seasons
      - a. Man
      - b. Animals – changes with the seasons
      - c. Plants – changes with the seasons
- II. Matter and Energy
  - A. Mechanical
    - 1. Simple Machines
      - a. The pulley – two kinds
      - b. The Lever – three kinds
      - c. The Screw
      - d. The Wedge
      - e. The Inclined Plane
      - f. The Wheel and Axle
    - 2. Uses of Simple Machines
      - a. The pulley – used to lift heavy loads
      - b. The lever – used to move a load or overcome some kind of resistance

        c. The screw – used to hold things together
            – used for lifting and digging
        d. The wedge – used to increase force
        e. The inclined plane – used to move heavy loads
        f. The wheel – used to reduce friction.

    B. Electrical Energy

        1. Magnets
            a. Kinds – Bar, Horseshoe, Electromagnet
            b. Properties of magnets
            c. Characteristics – Attraction and Repulsion

        2. Communication
            a. Electrical circuits – Series and parallel
            b. Uses – heat, light, communication
            c. Danger – fire, electrocution

III. Living Things

    A. Plants
        1. Parts of a plant
        2. Reproduction
        3. Growth – needs for growth

    B. Animals
        1. Kinds
        2. Reproduction – Intro. to sex education
        3. Growth – needs for growth

Division IV

SCIENCE

I. The Universe

    A. Weather
        1. Define weather, compare with climate.
        2. Why the seasons?
        3. Instruments used to measure weather
        4. Earth's atmosphere
            a. Make-up
            b. Sun and the atmosphere
            c. Layers
            d. Circulation
            e. Moisture
            f. Clouds
            g. Storms

II. Matter and Energy

    A. Mechanical

        1. Early machines
        2. Simple machines
            a. lever
            b. pulley
            c. wheel and axle
            d. gears

        e. inclined plane
        f. the screw
    3. Friction
    4. Engines for Power
        a. sailboats and windmills
        b. water wheels
        c. steam engines
        d. gasoline and diesel engines
        e. electric generators and motors
B. Magnetism and Electricity
    1. Magnetism
        a. magnet as a compass
        b. natural and artificial
        c. permanent and temporary
        d. penetrates through materials
        e. attraction and repulsion
    2. Nature of Magnetism
        a. fields
        b. earth as a magnet
    3. Electricity
        a. static
        b. current
            1. electron traffic
            2. electric circuit
            3. highways for electricity
        c. measuring
        d. fuses
        e. generating current electricity
            1. volta's discovery
            2. generators
            3. AC and DC
        f. electromagnet
            1. telegraph
            2. telephone
            3. electric motor
        g. electricity for heat and light
C. Fire and Its Prevention
    1. Kindling Fires
        a. rubbing sticks and striking stones
        b. matches
        c. essentials for burning
    2. Kinds of Fuels
        a. solid fuels
        b. liquids and gaseous
    3. Fire as a Destructive Agent
        a. Causes of fires
        b. what to do in case of fire
        c. extinguishing fire

SCIENCE – *DIVISION IV, (Cont'd)*

- III. Living Things
  - A. Animals – Their Growth and Development
  - B. Human Body and How it Works
    - 1. Body framework
      - a. bones
      - b. muscles
    - 2. Systems
      - a. Circulatory
      - b. Respiratory
      - c. Digestive

MUSIC

Objectives

To stimulate response to sound.

To improve the child's whole response to his environment.

To develop voice quality.

To provide a well organized and thorough program for the development of basic music skills.

To introduce and explain music fundamentals in a manner natural and interesting to children.

To teach children to express themselves in music and enjoy its performance.

To discriminate gross sounds to fine sounds.

To develop reading notation.

To help child learn to work with others in a cooperative endeavor.

To teach a child to be a leader or conductor.

To help children develop balance, poise, and gracefulness.

MUSIC

Division I

- I. Skills
  - A. Listening
    - 1. start – stop
    - 2. on – off
    - 3. waltz – march
    - 4. fast – slow
    - 5. loud – soft
    - 6. high – low
    - 7. Development of auditory acuity
      - a. vibrates of the drum – respond to beat of the drum
      - b. Environmental – doors slamming, a car horn, a fire siren, animal sounds such as bow-wow, moo, baa, peep, meow.
      - c. Musical sounds – drums, triangles, and bells.

MUSIC – *DIVISION I, (Cont'd)*

B. Rhythm (moving to music)
  1. Fundamental Rhythms
    a. walk
    b. run
    c. jump
    d. hop
    e. skip
    f. gallop
    g. sashay
    h. slide
    i. tip toe
    j. leap
  2. Activities – Hop like a rabbit, jump like a kangaroo. Involvement of large muscles such as swaying, bending and swinging. Crouch for low tones and rise for high tones.

C. Reading Music
  1. Threshold I – chart
  2. Use musical sketchbook
  3. Learn music that goes up and down by seeing – use objects on different levels.

D. Playing Instruments
  1. Introduce instruments one at a time
    a. jingle and wood instruments rhythm sticks, drum
  2. Teach to play
  3. Steady beat playing
  4. Pictures of orchestra instruments, teach whether blows, bows or is struck.

E. Singing
  1. Finger plays
  2. Action songs such as eemey weeney spider, I'm a Little Teapot, Happy Birthday
  3. Singing games and action songs such as Ten Little Indians, Did You Ever See a Lassie? London Bridge.

F. Creativity
  1. Finger paint to music – art to music
  2. Emotional reactions to musical stimuli
  3. Role plays: – puppetry
  4. Act our songs
  5. Imitate movements such as snowflakes, falling leaves, airplanes, rag-dolls, flowers growing.

Division II

A. Listening
  1. Review of waltz and march (distinguishing between)
  2. Distinguishing between a man's voice and a woman's voice
  3. Review of difference between:
    a. high and low
    b. loud and soft
    c. fast and slow
  4. Continuation of distinguishing between environmental and musical sounds.
  5. Review of drum exercises
  6. Clapping, stamping and snapping rhythm exercises
  7. The game of musical chairs
  8. Distinguishing between instrumental and vocal music

B. Rhythm (moving to music)
  1. Review of the basic rhythmic activities
    a. walking
    b. running
    c. hopping
    d. leaping
    e. skipping
    f. galloping
    g. sliding and or sashaying
  2. Teach the following basic dance steps
    a. two-step
    b. schottische
    c. step-hop
    d. step-swing
  3. Teach the following square dancing steps:
    a. elbow swing
    b. promenade (in skater's position)
  4. Teach simple folk dances
  5. Teach simple square dances
  6. Creative rhythms
  7. Rhythmic exercises for water

C. Reading Music
  1. Threshold to Music – Chart 2 (Mary Helen Richards)
  2. Musical Sketchbook (workbook accompanying the above mentioned series)
  3. Teach half-notes, quarters notes, eighth notes, 16th notes, and rests
  4. Teach the G-clef sign and the bass clef sign.
  5. Teach the 2/4, 3/4, and 4/4 meters
  6. Teach the difference between the step and skip in written music
  7. Teach the word "staff" and what it is
  8. Teach the bar line, measure, and double bar
  9. Teach the repeat sign

D. Playing Instruments
  1. Jingle and wood instruments for rhythm bands.
  2. Reading rhythm band scores
  3. Use instruments in teaching meter
  4. Creative rhythms
  5. Possibly have the children take turns in leading or conducting in 2/4 meter
  6. Teach instruments
    a. Associate names with instruments
    b. Children learn to recognize the instruments by sight

  Source: Allyn and Bacon: This is Music, Book 3

E. Singing
  1. Teach action songs such as:
    a. Old McDonald
    b. Rabbit in the Wood
    c. Ten Little Indians
    d. Bingo
    e. This Old Man

2. Teach singing games such as:
    a. Jimmy Crack Corn
    b. Ha Ha This Away
    c. Old Brass Wagon
3. Teach appropriate Christmas Carols
    (e.s. Twelve Days of Christmas Source: Magic of Music (Ginn)

F. Creativity
  1. This aspect can be incorporated with all other activities.

Division III

I. Listening
  A. Activities
    1. Vocabulary
      a. Tempo (fast to slow)
      b. Dynamics (loud to soft)
      c. Pitch (high to low)
    2. Meter
      a. Review 2/4 and 3/4 time
      b. Teach 4/4 and 6/8 time
    3. Distinguish between instrumental families
      a. drum
      b. brass
      c. string
    4. Distinguish between voices
      a. man
      b. woman
    5. Distinguish between rhythm pattern
      a. walk
      b. run
      c. gallop

II. Rhythm
  A. Activities
    1. Review basic rhythmic activities
    2. Review basic dance steps
    3. Teach polka
      a. Balance (leap-up and down)
    4. Teach square dancing steps
      a. Review elbow swing
      b. Promanade
      c. Grand right – left
      d. Allemande – left to corner
    5. Teach Dances
      a. Square
      b. Folk
    6. Encourage free interpretive dancing

7. Rhythm movement
    a. fast and slow
        lummi sticks
        puili sticks

III. Reading Music
  A. Activities
    1. Chart III – Threshold to Music
    2. Learn to recognize similar phrases in music to begin form (A-B) (ABA)
    3. Become aware of meter
        a. review staff
        b. signs: 2/4 – 3/4 – 4/4 – 6/8
        c. note and rest value
    4. Signs and their function
        a. sharp ♯ flat ♭ natural ♮
            < crescendo
            > minuendo
            𝄐 hold
            ♩♩ slur – two notes on different lines
            ♩♩ tie – two notes on same line
    5. Lines – spaces – treble clef
        a. games
        b. workbook

IV. Playing Instruments
  A. Activities
    1. Conduct meter for rhythm instruments
    2. Simple rhythm band scores
        Allyn Bacon (This is Music) III
    3. Add melody instruments
    4. Teach Instruments
        a. Film strips
        b. Review names and teach less common ones.
            – percussion
            – woodwind
            – brass
            – strings
        c. Place names of instruments in four families

V. Singing
  A. Activities
    1. Action songs
        a. Review lower level
    2. Singing Games

VI. Creativity
Involves all activities in all preceding areas of dramatization, toy band, rhythm, etc.

MUSIC – *DIVISION III, (Cont'd)*

VII. Composers
        1. Bach
        2. Hayden
        3. Mozart

Division IV

- I. Listening
    - A. Activities
        - 1. Vocabulary
            - a. Tempo (fast – slow)
            - b. Dynamics (loud – soft)
            - c. Pitch (high – low)
        - 2. Meter
            - a. Review
        - 3. Discriminate and differentiate
            - a. instruments
            - b. voices (man, woman, child)
            - c. moods (gay, sad)
            - d. rhythm of dances
            - e. rhythm patterns
        - 4. Appreciate
            - a. modern
            - b. band-orchestra
- II. Rhythm
    - A. Activities
        - 1. Review basic rhythm activities
        - 2. Review basic dance steps
        - 3. Teach new dance steps
        - 4. Encourage creative dancing
            - a. create moods with body
            - b. free expression
- III. Reading Music
    - A. Activities
        - 1. Review threshold to Music Charts I, II, III
        - 2. Introduce Chart IV
        - 3. Read and recognize musical symbols
        - 4. Compose –
            - a. create rhythm band scores
        - 5. Lines and spaces of bass clef
- IV. Playing Instruments
    - A. Activities
        - 1. Conduct meter for rhythm instruments
        - 2. Complex rhythm band scores
        - 3. Review instruments
            - a. families

        4. Teach instruments of orchestra
            a. find places in orchestra
            b. discriminate between different sounds

V. Singing
    A. Activities
        1. Review songs
        2. Introduce
            a. Star Spangled Banner
            b. America, the Beautiful
            c. Billy Boy
            d. Johnny Comes Marching Home
            e. Christmas Songs

VI. Creativity
    A. Involves all activities in all preceding areas.

VII. Composers

PHYSICAL EDUCATION

Division Objectives for Physical Education:

A. To provide a program stressing individual differences in physical development of the child.

B. To provide activity rich in meaning and satisfaction experiences.

C. To encourage development of self-discipline by providing desirable environmental situations.

D. To provide creative activities that stimulate processes of learning in inquiry and discovery.

E. To promote the physical development of each child to his highest point of reference.

F. To improve performance, adaptability, ingenuity and efficiency in each child by organizing a developmental program in motor skills.

G. To stimulate performance in development of mental and physical coordination.

H. To develop a feeling, within the child, of a sense of achievement through his own efforts and perseverance, by providing situations that stimulate self confidence.

I. To emphasize those areas that will create experiences in all types of movement activities.

J. To provide situations for individual work, for cooperation and competition with himself and others, while, at the same time he is cooperating and competing with his peers.

PHYSICAL EDUCATION

A. Survival Activities
  1. Climbing, rolling, hanging
  2. Safety drills
     a. fire
     b. air raid
     c. cross walk
     d. school safety

B. Skills on Large Playground Equipment
  1. Learn how to stop or go on a slide
  2. Hold onto a swing, pump
  3. Take turns on equipment

C. Fundamental Movements
  1. Run
  2. Hop
  3. Skip
  4. Jump
  5. Gallop
  6. Leap
  7. Slide
  8. March

D. Nonlocomotor Movements
  1. Bend
  2. Stretch
  3. Pull
  4. Push
  5. Swing
  6. Turn
  7. Twist

E. Self Testing Activities or Stunts
  1. Forward roll
  2. Roll Sideways
  3. Rocking

F. Sport Skills
  1. Throw a ball with underhand pass to partner 6 Ft. away.
  2. Throw a ball – let bounce and catch it.
  3. Throw a bean bag with and underhand toss into box 5 ft. away.
  4. Catching – suggest beginning with a large balloon.
  5. Punching bag.

G. Self Help Skills
  1. Tying
  2. Taking off
  3. Putting on
  4. Arranging
  5. Folding
  6. Buttoning

H. Beginners Tumbling
  1. Animal Walks
  2. Forward somersault

I. Eye Movement Exercises
  1. Rolling objects to a target
  2. Rolling objects through a target
  3. Spinning a top – a ball

  See Frostig Suggestions

J. Movement Exploration
  1. Anger
  2. Strength
  3. Power
  4. Joy
  5. Happiness
  6. Sorrow
  7. Weakness

K. Creative Rhythms
  1. Rag doll
  2. Puppet
  3. String
  4. Deflated Balloon
  5. Melted Snowman

L. Balancing (for games and testing)
  1. Walk on a string in a straight line
  2. Jump in and out of a circle
  3. Balance object on a spoon, etc. head-foot

M. Creative Play
  1. Story Plays
  2. Low organization games
    a. Simon Says
    b. Did You Ever See A Lassie?
    c. Bluebird
    d. Little Sally Water
    e. Drop the Clothespin
    f. Looby Loo
    g. Set up obstacle courses
    h. Drop the Hankerchief
    i. Tag

N. Frostig Coordination Exercises

PHYSICAL EDUCATION

Division II

Part I: *GAMES*. About 25% of the physical education program should be allotted for this type of activity.

A. Games can be utilized in developing the following *Movement Skills.*
  1. Running and stopping (e.g., Squirrels in Trees)
  2. Turning and stopping (Fire Engine)
  3. Dodging and tagging (Animal Chase; Chickens Come Home; The Gates Are Open)
  4. Jumping
    a. Vertical (Jack Be Nimble)
    b. Horizontal (Jump the Brook)
  5. Leaping (Leap the Brook)
  6. Hopping (I Spy; Hopscotch)
  7. Rolling and catching
    a. Target Activities
    b. Bowling dodgeball
    c. Teacher and Class
    d. Tunnel Ball

8. Bouncing and Catching
    - a. Bounce and catch to self
    - b. Bounce and catch to partner
    - c. Games
        - (1) Teacher and Class
        - (2) Bounce Ball
        - (3) Keep the Ball Bouncing
        - (4) Keep Away
9. Tossing and Catching
    - a. Forward Toss (CenterBase)
    - b. Vertical Toss and Catch to Self (Call Ball)
    - c. One Hand Underhand (Bean Bag Toss)
10. Throwing and Catching
    - a. Two Arm Shoulder Throw
    - b. One Arm Shoulder Throw
    - c. Games
        - (1) Teacher and Class
        - (2) Circle Throw
        - (3) Call Ball
        - (4) Bean bag Basket
        - (5) Keep Away
        - (6) Center Ball
        - (7) Dodgeball
11. Kicking and Catching
    - a. Stationary
    - b. From running position
    - c. Games
        - (1) One Base Kickball
        - (2) Kick and Run
        - (3) Place Kick Ball
        - (4) Soccer Call Ball
        - (5) Circle Soccer
        - (6) Line Soccer

B. Relays

1. Basic Running Relay
2. Partner Relay
3. Obstacle Relay
4. Toss-Catch Relay
5. Rescue Relay
6. Walk, Run or Hop Relay

C. Classroom Games

1. Do This, Do That
2. Secret Tag
3. Beanbag Basket Relay
4. Magic Carpet
5. Follow the Leader
6. Animal Trap
7. A-Tisket, A-Tasket
8. Musical Chairs
9. Dog and Bone
10. King and Queen
11. I Saw
12. Who's Missing?

Part II: *RHYTHMS.* About 25% of the physical education program should be allotted for this type of activity.

A. Continue Basic Locomotor Skills
   1. Walking
   2. Running
   3. Jumping
   4. Hopping
   5. Sliding
   6. Skipping
   7. Galloping
   8. Leaping

B. Continue Basic Non-Locomotor Skills
   1. Swinging
   2. Swaying
   3. Bending
   4. Stretching
   5. Rising
   6. Falling
   7. Twisting
   8. Turning
   9. Striking
   10. Dodging
   11. Pushing
   12. Pulling

C. Ball Bouncing Rhythms
   1. Bounce and Catch to Self
   2. Bounce and Catch to Partner

D. Action Songs and Stories
   1. Bear Hunt
   2. Snap Finger Polka
   3. Keep It Moving
   4. Dance Thumbkin Dance

E. Movements to Rhythm Instruments

F. Simple Folk and Square Dances
   1. Two-Step
   2. Schottische
   3. Seven Jumps
   4. Skip to My Lou

G. Creative Rhythms
   1. Animal Movements
   2. Mechanical Movements
   3. Nature Movements
   4. Dance A Story Albums
      (The Little Duck, The Magic Mountain, Balloons)
   5. Children's Story records suggesting movement

Part III: *SELF-TESTING.* About 50% of the physical education program should be allotted for this type of activity.

A. Warm-up Exercises
   1. Neck
   2. Arms and shoulders
   3. Trunk
   4. Legs
   5. Feet and Ankles
   6. Rubber Band Exercises

B. Stunts and Tumbling
  1. Animal Walks
    a. Camel Walk
    b. Crab Walk
    c. Kangaroo Hop
    d. Leap Frog
    e. Rabbit Jump
  2. Bouncing Ball
  3. Log Roll
  4. Coffee Grinder
  5. Forward Roll
  6. Backward Roll

C. Balance
  1. Continue balancing activities while moving
    a. tight rope walking
    b. walking a fence
    c. stepping stones
  2. Picking up objects from various stationary positions
    a. One foot balance
    b. upright
    c. Bending
    d. Straight Knee

D. Movement Exploration
  1. Imitation of inanimate objects
  2. Imitation of animals
  3. Imitation of people in various occupations

E. Indoor Apparatus
  1. Balance Beam
    a. Basic positions
    b. Forward walk
    c. Backward walk
    d. Forward run
    e. Sliding
    f. Galloping
  2. Horizontal Bar
    a. Hang Like a Monkey
    b. Roll Over a Barrow
    c. Pull-ups
    d. Skin the Cat
  3. Rope Jumping
    a. Long Rope
    b. Individual
  4. Chair Exercises

F. Outdoor Apparatus
  1. Climbing Cube
  2. Horizontal Ladder

PHYSICAL EDUCATION

Division III

- A. Sports
  - 1. Soccer
    - a. Skills
      - 1. How to kick the ball
      - 2. How to dribble the ball
      - 3. How to pass the ball
      - 4. Demonstrate good team work
    - b. Lead-up Games (Van Hagen: others)
      - 1. End zone soccer 472 (Play with a Purpose)
      - 2. Square soccer 225
      - 3. Circle soccer 226
      - 4. Bombardment 228
      - 5. Dribble the ball & kick, – shuttle relay
  - 2. Football
    - a. Skills
      - 1. Ball handling, exploring with football in groups
      - 2. Movement
      - 3. Game Situations
    - b. Lead-up Games (Anderson P. 240)
  - 3. Basketball
    - a. Skills
      - 1. How to use a basketball
      - 2. How to move quickly and efficiently
      - 3. How to pass the ball
    - b. Lead-up Games (Anderson P. 270)
- II. Rhythm
  - 1. Movement Exploration
    - a. Skills
      - 1. Performance of locomotive skills
      - 2. Increase coordination, balance, and timing through rhythmic activities.
      - 3. Skill in moving efficiently
    - b. Lead-up Activities (Anderson P. 371)

PHYSICAL EDUCATION

Division IV.

- I. Sports
  - 1. Soccer
    - a. Skills
      - 1. Free play with many balls
      - 2. Review kick, dribble, pass
      - 3. Combine dribbling and kicking
      - 4. Demonstrate positions and name them
      - 5. Demonstrate good team work

- b. Lead-up Games
  - 1. Circle soccer
  - 2. Square soccer
  - 3. Bombardment
  - 4. Line soccer
  - 5. Field hockey (?)

2. Football (Andrews – p. 228)
   - a. Skills
     - 1. Ball handling, exploring with footballs in groups
     - 2. Movement
     - 3. Game situations
     - 4. Understanding terminology, rules, plays

3. Basketball
   - a. Skills (see attached)
   - b. Lead-Up (Anderson 271)

4. Volleyball
   - a. Skills (Andrews 219)
     - 1. Review div. III
     - 2. Ball handling, exploring with balls in groups
     - 3. Movement
     - 4. Game situations
     - 5. Understand terminology, rules, plays
   - b. Lead-Up games

5. Softball
   - a. Skills (Andrews p. 220-21)
     - 1. Review Div. III
     - 2. Warm-up and basic
     - 3. Batting and running
     - 4. Game situations
     - 5. Understanding terminology, rules, plays
   - b. Lead-Up Games (Anderson 353)

Suggested Sport Areas
- 1. Tennis
- 2. Bowling
- 3. Wrestling
- 4. Golf

II. Self – Testing
- A. Stunts, tumbling, pyramids
- B. Track Events
  - 1. throwing
  - 2. jumping
  - 3. running relays
- C. Developmental exercises
- D. Wrestling
- E. Movement activities

III. Rhythms
- A. Review basic locomotor skills

B. Review basic non-locomotor skills
C. Review ball bouncing rhythms
D. Develop and review simple folk and square dancing
E. Movement to rhythm instruments
F. Creative Rhythms

IV. Movement Activities

(See attached program)

Division I

MATH

II. Skills

1. Sets
   A. Equivalence – non-equivalence
   B. One to one correspondence
   C. Subsets
   D. Comparison of sets
2. Number-Numeral
   A. Numeral as names for numbers
   B. Understanding numbers 1-10, on to 50 if able
   C. Recognition of numbers 1-10, ability to write
   D. Zero as cardinal number of the empty set
   E. Ordinals first – fifth
   F. Number selection – How many?
3. Order and Relations
   a. Size comparison
   b. Order of numbers
   c. Fundamental combinations
   d. Simple measurement
   e. Patterns
4. Readiness for Addition
   a. Union of sets
   b. Addition combinations through 5
5. Readiness for subtraction
   a. Finding missing addend
   b. Subtraction combinations through 5
6. Geometry
   a. Geometric shapes: circle, square, triangle, rectangle

Suggested Activities

Sequencial stringing of beads
Compare heights, weights
Discuss birthdays
Introduce rulers, yardsticks
Feel Box
Collections, classifications – arrange according to size, etc.
Appropriate play experiences
Manipulative experiences
Role playing – stories – songs, etc.

MATH – *DIVISION I, (Cont'd)*

Equipment

Puzzles, games
Building blocks Susenaire rods Percept cards
Montesorri counting rods
Sand table
SRA materials, etc. Flannel board and cut-outs

Division II MATH

- I. *SETS.*
  - A. One-to-one correspondence
  - B. Comparison of sets
    - 1. Equivalent and non-equivalent sets
    - 2. Sets with fewer members
    - 3. Sets with more members
  - C. Cardinal Number of sets to 18
  - D. Subset
  - E. Empty Set
  - F. Union of Sets
  - G. Separation of Sets
- II. *NUMBERS AND NUMERALS.*
  - A. Number as the property common to matched sets
  - B. Counting elements in a set
  - C. Cardinal numbers including the number of the empty set
  - D. Matching numeral to the number of a set
  - E. Many names for the same number
  - F. Number perception without counting
  - G. Reading and writing numbers from 0 to 100
  - H. Reading number names one to ten
  - I. Counting by ones, tens, fives, and twos
  - J. Ordinals First to Tenth
  - K. Counting backwards from 10, then 20
- III. *PLACE VALUES.*
  - A. Use of ten digits 0-9
  - B. Ones and Tens
  - C. Place values 0-100
  - D. Expanded notation
- IV. *ORDER AND RELATIONS.*
  - A. Comparison of Numbers
    - 1. Before
    - 2. After
    - 3. Between
    - 4. One more
    - 5. One less
    - 6. More than
    - 7. Less than
    - 8. Equal to
  - B. Introduction and use of <, >, and = symbols
  - C. Introduction of Number Line for Order

V. *ADDITION AND SUBTRACTION.*
- A. Addition
    1. Union of sets to define addition
    2. Addition combinations through 18
    3. Introduction of "+" symbol
    4. Addition Equations
        - a. Sum
        - b. Missing Addend
    5. All combinations of one number
    6. Vertical notation
    7. Addition Table
    8. Additive Property of Zero
    9. Two-digit addition, no carrying
        - a. Expanded notation
        - b. Vertical notation
    10. Column Addition
- B. Subtraction
    1. Finding Missing Addend
    2. Set Separation to define subtraction
    3. Subtraction combinations through 18
    4. Introduction of "-" symbol
    5. Subtraction equations
    6. Vertical notation
    7. Subtracting zero
    8. Subtracting a number from itself
    9. Two-digit subtraction, no borrowing
        - a. Expanded notation
        - b. Vertical notation
- C. Use of Number Line for Addition and Subtraction

VI. *FRACTIONS.*
- A. Parts of a whole
- B. Equivalent subsets
- C. Fractional Numbers
    1. One-half
    2. One-fourth
    3. One-third

VII. *MEASUREMENT.*
- A. Money
    1. Cent (Penny)
    2. Nickel
    3. Dime
    4. Quarter
    5. Dollar
- B. Time
    1. Hour, half-hour
    2. Day, week, month, year
    3. Calendar Dates 1-31

C. Linear Measures
  1. Inch
  2. Foot
  3. Yard

D. Liquid Measures
  1. Cup
  2. Pint
  3. Quart
  4. Gallon

E. Weight
  1. Ounce
  2. Pound

Division III

MATH

I. Objectives

1. To develop an understanding of the properties of real numbers:
   (1) communative
   (2) associative
   (3) distributive
2. To extend number concepts, consciousness and understanding of place value.
3. To extend addition, in graded steps, from simple combinations to two or more digit numbers, introducing process of carrying.
4. To extend subtraction, in graded steps, from simple combinations to two or more digit numbers, introducing process of borrowing.
5. To develop an understanding and appreciation of common geometric forms that pupils meet and experience.
6. To understand the significance of measure and measurement and enlarge the concept of value, size and distance.
7. To develop the concept that either of the two numbers multiplied to form a product is the factor.
8. To develop an understanding of grouping and separating, emphasizing the concept of "times as many", as a means of stimulating an interest in multiplication.
9. To develop an understanding of the concept of "division into groups" as a means of stimulating an interest in division.
10. To introduce concepts relating to points, lines and line segments.
11. To encourage use of the number line and emphasize its use in addition and subtraction.
12. To clarify language and vocabulary experiences in all areas.

I. Extension of Sets

A. Sets
  1. Members of sets
  2. Subsets

B. Equivalence and inequivalence

- II. Property of the Real Numbers
  - A. Properties of Addition
    - 1. Commutative property
    - 2. Associative property
  - B. Addition of whole numbers
    - 1. To two places and three places
    - 2. Carrying
    - 3. Story problems
  - C. Subtraction of whole numbers
    - 1. To two places and three places
    - 2. Borrowing
    - 3. Inverse operations
- III. Place Value and Place Value Notation
  - A. The number line and number series
  - B. Reading and writing numbers to 1,000
  - C. Intro. million
- IV. Geometry
  - A. Intro. to points, lines and line segments
    - 1. curves
    - 2. rays
  - B. Geometric Figures
    - 1. Congruence
    - 2. Similar figures
    - 3. Intro. to solids
- V. Measurement
  - A. Money
    - 1. Penny, nickel, dime, quarter, half-dollar, dollar
    - 2. ¢ and # notation
    - 3. Making change
  - B. Time
    - 1. Telling time to the minute
    - 2. Day, week, month, year
    - 3. Notation of am and pm
  - C. Linear Measure
    - 1. Inch
    - 2. Foot
    - 3. Yard
    - 4. Fractional parts of an inch
    - 5. Conversion from one unit to another
  - D. Liquid Measure
    - 1. Pint
    - 2. Quart
    - 3. Cup
    - 4. Gallon
    - 5. Half-gallon
  - E. Story Problem

VI. Multiplication Facts
  A. Property of Multiplication
    1. commutative property
    2. associative property
    3. distributive property
    4. identities (elements) (zero for addition, one for multiplication)
  B. Multiplying hundreds, tens and ones

VII. Intro. to Division – Definition
  A. One – and two-digit division with zero remainder
  B. Relation to subtraction
  C. Inverse operation

VIII. Factoring
  A. Factors and Products
  B. Zero through five as factors

Division IV. **MATH**

I. Sets
  A. Set notation and vocabulary
    1. braces
    2. elements
    3. one to one correspondence
  B. Types of Sets
    1. Finite
    2. Infinite
    3. Empty
  C. Numbers
    1. Sets of counting numbers
    2. Sets of whole numbers
      a. even
      b. odd

II. Fundamental Operations with Whole Numbers
  A. Addition
    1. Commutative property
    2. Associative
    3. Identity
  B. Subtraction
    1. Missing minuend
    2. Missing subtrahend
    3. Zero in the minuend
  C. Multiplication
    1. Properties
    2. Identity property
    3. Two and three place multipliers
    4. Zeros
    5. By 10 and 100

- D. Division
  - 1. Distributive property
  - 2. Quotient of three places
  - 3. Remainder as a fraction
  - 4. By 10 and 100
- E. Rounding
  - 1. Extending approximation to 10's and 100 and 1000.

III. Factorization
- A. Prime numbers
- B. Composite numbers
- C. Complete factorization

IV. Rational Number System
- A. Addition
  - 1. Like denominators
  - 2. Unlike denominators
  - 3. Mixed numerals
- B. Subtraction
  - 1. Like denominators
  - 2. With borrowing
  - 3. Unlike denominators
  - 4. Mixed numerals
- C. Multiplication
  - 1. Meaning of "of"
  - 2. Associative and commutative properties
  - 3. Fractions times whole numbers
  - 4. Mixed numbers times whole numbers
  - 5. Decimals

V. Geometry
- A. Lines
  - 1. Through one point
  - 2. Through two points
  - 3. Intersection
- B. Planes
  - 1. Determined by three points
  - 2. Intersection of two planes
- C. Closed curves
  - 1. Triangle
  - 2. Quadrilateral
  - 3. Hexagon
  - 4. Pentagon
  - 5. Parallelogram
  - 6. Circle
  - 7. Ellipse
- D. Angles
  - 1. Types and definition
  - 2. Interior and exterior of angles
  - 3. Measurement

VI. Emphasis throughout
    A. Story problems
    B. Puzzles
    C. Games

VII. Extension of definitions and identifications of geometric figures
    A. Perimeter
    B. Area
    C. Parallel
    D. Perpendicular
    E. Surface areas

VIII. Logic
    A. The use of logical statements
    B. Truth tables
    C. Flow charting
    D. True and false statements

READING

I. Objectives
    A. To encourage the child to want to read.
    B. To provide varied experiences which will:
        1. Cultivate an understanding and use of oral language
        2. Build concepts and percepts
        3. Develop skills preparatory to reading
    C. To increase knowledge of sound symbol relationship.
    D. Increase vocabulary and word recognition.
    E. To read, to the best of his ability, in clear complete sentences.
    F. To increase knowledge of sound symbol relationships.
    G. To apply sound symbol technique learned in other areas of reading (boardwork – library books, etc.)
    H. Stimulate development of the following skills in oral and silent reading
        1. to follow printed directions
        2. to read to find answers
        3. to interpret figurative language
        4. to use reference material
        5. to read for comprehension
        6. to recognize words on sight and be able to attack new ones
    I. To encourage use of dictionary
    J. To establish habit of independent reading to achieve independence on the part of the child.
    K. To encourage the child to read functionally, a variety of materials.
    L. To develop work habits and study skills in reading for information.
    M. To develop appreciation of literature.
    N. To develop a critical reading habit to maintain an interpretation of the writer's meaning.
    O. To develop interest in reading as a satisfactory hobby.

II. Programs

- A. S R A
- B. Readers Digest
- C. Programmed Reader (Sullivan)
- D. Cuisenaire Rods
- E. Frostig Visual Perception Program
- F. Weekly Reader
- G. Study Skill Tapes
- H. Basal Readers

Supplementary Programs and Materials

1. Educational Television
2. S R A Spelling Kits
3. Graded Linguistic Series
4. World Books
5. Owl Series on Grade Levels
6. Rheems Caliphone
7. Peabody Language Kits
8. Harper – Row Linguistic Series
9. McMillian Spectrum Skill Builders

Division I

READING

I. Visual Discrimination

1. Ability to note similarity in objects, signs, words, etc.
    - a. fine discriminations
    - b. simple discriminations
2. Ability to note differences in size of objects which are similar
3. Ability to note differences in detail in similar objects
4. Ability to note differences in orientation
    - a. which are going a different way
    - b. which are going left, right
    - c. which are going above, below
    - d. which are long, short
5. Ability to match objects with a picture
6. Ability to match letters with a printed letter

II. Auditory

1. Ability to note differences in sound.
    - a. pitch
    - b. words
    - c. rhythms
    - d. chords
    - e. differences in high, low, loud, soft, fast, slow
2. Ability to hear which word begins with a different letter.
3. Ability to hear rhyming words (for those able)
4. Ability to say the words in a group which begin with the same letter.
5. Ability to interpret language through dramatization.

READING – *DIVISION I, (Cont'd)*

III. *Skills*

1. Understanding of language concepts as: run, hop, fly, over, under, above, etc.
2. Organizing and classifying concepts as:

    a. fruits
    b. vegetables
    c. birds
    d. flowers
    e. trees
    f. dogs
    g. cats
    h. horses
    i. dresses
    j. suits
    k. books
    l. etc.

3. Continuance of exercises for left to right progression.
4. Continuance of language enrichment experiences.
5. Improving understanding and use of language.
6. Provision for activities to extend memory.
7. Puzzles for visual discrimination.
8. Speech exercises
9. Interpretation of ideas through art experiences.
10. Exercises which increase mental abilities through selective discrimination i.e. which ending fits the story best, etc.
11. Care of books.
12. Development of sight vocabulary for use in word recognition.

IV. *Visual Memory*

A. Ability to recognize the colors of the spectrum.
B. Visual memory of objects.
C. Ability to find a letter or sound from memory of a flashed card and or voiced presentation.
D. Ability to reproduce simple geometric shapes from memory.
E. Ability to find words or simple phrases from flashed or spoken presentation.
F. Ability to reproduce letters, words, shapes from memory.

V. *Development of Comprehension*

A. Ability to remember the names of objects, etc.
B. Ability to gather, use and understand new words learned through new daily experiences.
C. Ability to arrange a picture story with events in correct sequence.
D. Ability to re-tell a story.
E. Ability to answer questions about a story.
F. Ability to come before the class and tell or dramatize about some personal experience.

VI. *Kinesthetic Abilities*

A. Ability to crayon larger objects.
B. Ability to express experiences with various media.
C. Ability to interpret language materials through self expression.
D. Ability to trace objects, letters, etc.
E. Ability to manipulate a variety of devices i.e. scissors, blocks.

VII. *The Frostig Program for the Development of Visual Perception* – (Suggested Coverage)

- A. Perceptual Constancy
    - 1. (1.) 1-14 – 38-48
- B. Figure Ground Perception
    - 1. (1.) 1,2,4,6,16,21-24,32,33,65,66
- C. Position in Space
    - (1.) 1-4
- D. Visual Motor Coordination
    - (1) 1-8, 10-22, 30, 41-43, 49,51, 78-90
- E. Spatial Relations
    - (1) 1-4, 18, 19, 25-28, 5, 1-60, 69-76

READING

Division II

I. *Word Recognition Skills.*

- A. Contextual Clues
    1. Picture only
    2. Picture and words
    3. Definition
    4. Experience
    5. Comparison
    6. Synonyms
    7. Summary
- B. Picture Clues
- C. Configuration Clues
- D. Observing Special Features
- E. Detecting similarity to known words.
- F. Phonetic Analysis
    1. Vowel and consonant sounds as learned for speech
    2. Identifying rhymed sounds and words
    3. Building up of families of phonograms
    4. Exercises
        - a. Words with the same beginning sound
        - b. Words with the same ending sound
        - c. Words that sound exactly the same
- G. Structural Analysis
    1. Known parts of words identified
    2. Compounds–two known root words
    3. Comparatives
    4. Possessives
- H. Sight recognition of common words developed by repetition in many different and meaningful uses.

II. *Vocabulary Development.*

A. Organizing Vocabulary
  1. Nouns
    a. labeling parts of things
    b. classification
    c. synonyms
    d. antonyms
    e. classification of words as to occupation
  2. Verbs
    a. movements (action)
    b. sounds made by people, animals, and things
    c. feelings
    d. cognition
  3. Adjectives
    a. opposites
    b. synonyms
    c. degree
    d. number
  4. Use of Fitzgerald Key or other device for classifying words as to parts of speech.

B. Direct Experiences
  1. Trips
    a. Stores
    b. Zoo
    c. Farm
    d. Community Helpers
    e. Science field trips
  2. Activities
    a. Science
    b. Health
    c. Safety
    d. Social Studies
    e. Holidays
    f. People
  3. Projects
  4. Ways to bring in reading and writing
    a. Books and stories about similar experiences
    b. Writing letters
    c. Lists
    d. Bulletin board items
    e. Experience charts
    f. Original Writing
  5. News Reporting
  6. Library Books
  7. Storytelling
  8. Dramatic Play

- C. Repetition in meaningful sentences
  - 1. Blackboard writing related to language and other activities
  - 2. Experience charts
  - 3. Notices
  - 4. *My Weekly Reader*
  - 5. Library Books
- D. Drill
  - 1. Flash cards
  - 2. Workbooks
- E. Exercises
  - 1. Matching words and pictures
  - 2. Matching phrases to pictures
  - 3. Categorization and Association
    - a. matching words that go together
    - b. matching words with the same meaning
    - c. matching words that are opposites
    - d. using identifying phrases
    - e. completing definitions
    - f. playing anagrams
    - g. finding small words in a long word
    - h. scrambled words
    - i. rebus games
    - j. choosing indicated words from a list
    - k. distinguishing between similar words
    - l. choosing the words identified in a sentence
  - 4. Specific Language Forms
    - a. can–cannot
    - b. all–some
    - c. always–never
    - d. each–all–every
    - e. subject–object
    - f. compounds

III. *Comprehension.*

- A. Reading in thought units
- B. Reading with purpose
- C. Finding answers to questions by reading
- D. Following sequence of events in a paragraph and story
- E. Projection beyond the story–cause or effect
- F. Sentence and paragraph meaning
  - 1. Following Directions
    - a. draw
    - b. cut
    - c. paste
    - d. color
    - e. draw a line under
    - f. draw a line over
    - g. put an X on
    - h. draw a circle around
    - i. put an X over or under
    - j. draw a line from____to____

2. Visualizing Content
   - a. Drawing the pictures of
     - (1) simple phrases
     - (2) short paragraphs
     - (3) longer paragraphs
   - b. Cutting out magazine pictures to match teacher-assigned sentences
   - c. Dramatization of paragraph written on chart or blackboard
   - d. Playing charades
   - e. Changing the wrong word in a sentence which contains an absurdity
3. Getting the Main Idea
   - a. Choosing titles for paragraphs
4. Drawing Inferences
   - a. Simple teacher written exercises to develop this ability
   - b. Riddles

IV. *Study Skills.*

- A. Proper way to hold a book, turn page.
- B. Increasing attention span
- C. Watching to learn
- D. Alphabetizing by first letter
- E. Beginning Dictionary Skills
  - 1. Picture Dictionaries
  - 2. Sounds of letters
  - 3. Names of letters
  - 4. Sequential order of alphabet

V. *Frostig Program for the Development of Visual Perception.* Listed below are the recommended pages of the Frostig program to be covered at this level for the areas of visual perception stated.

- A. Perceptual Constancy (pages 15-70)
- B. Figure-Ground Perception (Pages 3, 5, 7-15, 17-20, 25-31, 34-64, 67-69b)
- C. Position in Space (pages 5-11, 16-36)
- D. Visual-Motor Coordination (pages 23-29, 31-40, 44-48, 52-77, 9)
- E. Spatial Relations (pages 5-17, 20-24, 29-50, 61-68, 77-84)

VI. *Materials*

- A. Basal Readers
- B. Supplementary Readers
- C. Programmed Readers
- D. Library Books
- E. Books and stories related to subject matter or special interest areas
- F. Experience stories
- G. Blackboard writing
- H. Books and scrapbooks made by the class
- I. Charts
- J. Letters
- K. Maps
- L. Picture Dictionaries
- M. Games and Puzzles
- N. Workbooks
- O. Films
- P. Filmstrips
- Q. Frostig Visual Perception Materials
- R. Cuisenaire Rods
- S. Teacher made materials
- T. SRA Reading Laboratories
- U. *My Weekly Reader*

READING

Skills

A. Word Recognition
  1. Phonetic Analysis
    a. Long and short vowel sounds
    b. Dipthongs (ow, ou, oi, oy)
    c. Vowel diagraphs (oa, ea, oo, ai)
    d. Silent letters (wr, kn)
    e. Meaning and use of syllables
    f. Accent mark-aid to pronunciation
  2. Structural Analysis
    a. Prefixes
    b. Comparatives (higher-longest)
    c. Possessives
    d. Root words recognized in word variants
    e. Hyphenated and compound words
    f. Contraction

B. Vocabulary Growth
  1. Experiences extended and new words.
  2. Context used to learn meaning of strange words.
  3. Multiple meanings of words noted
  4. Extension of vocabulary through broad reading
  5. Words with similar meanings – with opposite meanings.

C. Comprehension
  1. Continuation of previous comprehension skills.
  2. Reading with a purpose (What did – Do next – What happened –?)
  3. Finding answers to questions by reading.
  4. Following sequence of events in paragraph and story.

D. Oral Reading
  1. Relaxation freedom from tension
  2. Dramatic interpretation of conversation
  3. Taking character parts in a story
  4. Motivation: Sharing a story

E. Study Skills
  1. Listening to teacher, children, radio and recordings for details and main ideas; for poetry appreciation; for new understanding
  2. Attention span increase
  3. Page number used to locate specific materials
  4. Use of picture dictionary for locating words, for meaning and for spelling
  5. Comprehending dictionary definitions

READING

Skills

A. Word Recognition
   1. Phonetic analysis
      (a) enunciation of words often misspelled
      (b) use of dictionary for pronunciation
      (c) syllabication: rules, regarding
         single consonants between vowels
         two consonants between vowels
         accent in multiple syllable words.

   2. Structural analysis
      (a) Root words
      (b) Meaning of terms: root, prefix, suffix
      (c) Formation of new words, combining forms
      (d) Familiarity with form changes by prefixes: un, in, dis, re
      (e) Familiarity with form changes by suffixes less, we, ment, ness, ary, able.

B. Vocabulary Growth
   1. Extending word meanings by noting synonyms, antonyms, homonyms
   2. Use of context in getting meaning
   3. Choice of exact word recognized
   4. New words with multiple meanings
   5. Extension of vocabulary through broadreading
   6. Defining and remembering terms
   7. Use of dictionary for meanings

C. Comprehension
   1. Continuation of previous comprehension skills
   2. Paragraph topics and subtopics identified
   3. Supporting ideas noted
   4. Unfamiliar terms defined by context
   5. Meaning of nonliteral language–metaphors and idiones–determined
   6. Differentiation between story and report recognized
   7. Organization of notes into simple outline
   8. Translating paragraph – from reading to writing of a paragraph
   9. Interpreting maps, graphs and charts
   10. Noting punctuation as a help in getting meaning
   11. Use of pictures, charts, diagrams to interpret reading matter

D. Oral Reading
   1. Basic standards for effective oral reading set and observed
   2. Punctuation marks used to guide reading
   3. Directions, explanations read effectively
   4. Characterization built in reading conversation of dialogue

E. Study Skills

1. How to use a textbook – table of contents, index, chapter titles and, paragraph heading
2. Application of reading skills in studying assignments
3. Dictionary use – alphabetical order mastered
    a. Use of guide words
    b. Context clues to select definitions
    c. Effect of meaning on accent
    d. Pronunciation symbols
    e. Abbreviations in dictionary
4. Encyclopedia use
    a. Location of information
    b. Purpose in reading determined
    c. Main points and details noted
5. Making notes on reading matter
6. Keeping bibliographical data
7. How to use the library arrangement of books by fiction and non-fiction, alphabetizing by author.

READING EVALUATION

Various criteria are used for evaluation of group and individual performance. Diagnosis and evaluation are made through standardized tests, measures found in multi-level reading materials, spelling surveys, and personal observation of teachers while working with students. Copies of students' written and taped responses are filed for latter comparison of growth.

Versatility of reading rates, purposes and interests in reading, and changing of functional reading levels in library books are noted. Growth of sophistication in the reading of books and other reading materials is considered the chief criterion of success.

A. Standardized test evaluations include:

1. Metropolitan
2. Gates primary reading tests
3. Achievement tests – wide range
4. Frostig test of visual perception

B. Teacher and/or student-devised forms of evaluation are:

1. Teacher-made oral and written tests

2. Formal evaluation procedures:

    a. creative writing
    b. notebooks
    c. various kinds of book reviews
    d. research papers and reports
    e. special projects and speeches.

READING EVALUATION *(Cont'd)*

3. Informal evaluation procedures:
    a. individual conference
    b. informal reading inventories
    c. dramatization
    d. show-and-tell activities
    e. role-playing
    f. puppetry
    g. class participation
4. Student self-evaluation:
    a. sharing and discussing written projects
    b. oral reports
    c. classroom activities

READING SUMMARY

The Margaret S. Sterck School's Faculty is encouraged to study and try out new materials and teaching techniques. The curriculum of this school will complement the curriculum of the Newark Special District with the intention of integration into the "normal hearing" classroom where possible. Efforts will be made to gain insights into how best to prescribe effective learning situations for children with different learning capabilities. The major goal is to achieve a well-balanced reading program which will include skills in reading, language arts and individualized reading keeping in mind children having specific reading and learning problems.

Appendix A – Position Papers

EARLY CHILD DEVELOPMENT: SOME IMPLICATIONS FOR PRESCHOOL EDUCATION*

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The first 5-6 years are the period of most rapid development of any 5-6 year period in the human organism in terms of amount and complexity of development. In this short period the tiny infant of 20" in length, weighing 7-9 pounds with 1/3 of his adult-size brain, having no language, no understanding, not able to control much of his body or even distinguish himself from others, becomes a child of 40-46 inches, 30-35 pounds, with an adult-size brain with an amazing repertoire of skills, comprehensions and an average vocabulary of some 2,000 words. Consider the supermen we would become if we continued to grow at this same rate!

Both professional and laymen have become more aware of the rapidity of expansion in the early years and of at least some of its implications for the effect of early development on later development. The years of infancy and early childhood are receiving unprecedented attention today. As a result, the preschool teacher is challenged to demonstrate her own awareness of early development through her relations with children and through the curriculum she provides. It is hoped that this paper will offer some useful guidelines to the teacher for doing this.

A few basic principles of development will be offered first along with questions as to how these might be incorporated in the operation of the preschool program. Secondly, developmental stages in early childhood will be described somewhat briefly from two different theoretical viewpoints. Piaget's theory deals with cognitive development. Erikson's theory deals with psycho-social development. The two theories, in total, are rich in their implications for the role of teachers and for creating a growth–producing environment but it is not intended that the sampling offered here be considered the primary source of curriculum ideas. Finally, an outline from a child development point of view for areas to be included in a preschool program is briefly sketched.

DEVELOPMENT PRINCIPLES

The first principle recognizes the *continuity and discontinuity* of growth. The child as a whole is growing all the time, not in fits and starts as was once believed. Growth is continuous from conception to death. However, different regions and subsystems develop at different rates and different times. This asynchronous growth in the physical realm accounts for changing body proportions and glandular patterns throughout life. Psychological equivalents of asynchronous growth are less specific, but it is certain that children have periods of greater receptivity to certain kinds of learning and thinking at one time than at another and intense preoccupation with one kind of behavior shifts to another kind of behavior. Consider the toddler who is so busy mastering the rudiments of locomotion and motor control he has little time for developing a spoken language, the preschooler who is so intensely involved in discovering the what, how and why of his world that mealtimes are a nuisance (and, in fact, a leveling off of physical growth rate at this time requires proportionately less

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**Paper presented to the preschool faculty of Margaret Sterck School for Hearing Impaired, July 11, 1968.*

food intake than was true earlier). Consider the adolescent who shows a spurt in ability to deal with logic and abstractions while his ability to deal with his own emotions seems to remain at a younger level or move ahead very slowly. Growth rates vary within individuals and among individuals. What does this mean in terms of readiness in a group of four-year-olds?

Another principle, that of *differentiation* states that development proceeds from the simple to the complex, from general to specific. From the single-celled zygote there develop by differentiation an immense number of cells of highly varied structure and function. The cells change in character forming different kinds of tissues with specialized functions: nerves, skin, bone, blood, etc. These differentiated components become submerged in the new, complex organization of the whole person. The part-functions become subordinated to the emergent whole-function. We refer to this as functional subordination (Stone & Church, 1968).

Differentiation and functional subordination are evident in all of behavioral, as well as physiological development. The neonate's cry develops into distinctive cries for hunger, anger, loneliness. The toddler's lumbering gait preceeds more specific locomotion like skipping, hopping, galloping. The two and three-year-old hammers or paints or climbs boxes for the pleasure of the doing. For the older child, hammering or painting is functionally subordinate to making specific things and the act of climbing is only part of the fireman's role being dramatized. How might the preschool environment provide for differentiation and functional subordination in development?

The third principle, easier to state than to explain, holds that maturation, experience and learning are interrelated and interdependent. Physical maturation is instigated by heredity. That is, the genetic material in the cell nuclei not only determines that the organism will be human rather than a monkey or a elephant but it also plays a large part in determining structural characteristics of this human.

Yet, the prenatal and postnatal experiences of the developing organism can markedly effect the course of physical development in spite of the genetic code. Babies born of mothers on nutritionally inadequate diets or mothers who took thalidomide or contracted measles in the early months of pregnancy attest to the effects of some prenatal environmental influences. Diet, fresh air, illness, exercise are a few of the obvious influences on postnatal physical development. We also have evidence from the study of rats that cognitive experience (exposure to varied stimuli and problem-solving tasks) alters the brain biochemistry and that such changes in the brain are associated with faster learning than takes place among rats reared in ordinary laboratory conditions.

Findings from animal research are reviving interest in the concept of stimulus-induced maturation (Jensen, 1967). It is possible, for example, that learning to make finer perceptual discriminations may alter the structure of the sense receptors.

Maturational change brings with it a readiness for the appearance of a given kind of behavior but it does not guarantee that such behavior will take place. Usually, environmental stimulation of some sort is required. The child may be capable of pumping himself on a swing or of building carefully balanced block structures but he needs appropriate opportunities to develop such skills. The four-year-old may be quite ready and eager to ask questions and to understand many new concepts in his world but he must have the opportunity to express these questions through some form of communication and to receive answers as he is confronted with the concepts he is attempting to learn.

Physical maturation alters not only the child's potential for learning but the way that others perceive him. In other words, the developing child influences his environment at the same time that the environment influences him. Anyone who has worked with children, particularly handicapped children, is well aware that there is indeed a subtle but pervasive interplay of the child's physical maturation, of parental and teacher hopes and expectations and subsequent stimulation and the freeing or freezing of the child to learn in different situations.

What are the characteristics of a preschool environment which promotes optimal learning?

Another principle declares that all human motivation is not explainable in terms of biological discomfort or of need for affiliation with other creatures; at least some behaviors can be described as resulting from cognitive needs or strivings, the need to know, to find out, to be interested (Stone & Church, 1968). The term, *competence motivation* has been suggested for the child's curiosity about things and what they are like and his drive to acquire skills in dealing with the world, whether at the level of filling a pail with sand, dressing oneself or speaking like an adult. Competence motivation leads to learning and learning to change. How can the preschool environment utilize this notion of competence motivation?

THEORIES OF DEVELOPMENT IN EARLY CHILDHOOD

Both Erikson and Piaget view development in their respective areas of specialization as an epigentic process. Growth takes place through a series of new formations or successive differentiations. Each period or stage of growth emerges out of the one before and is a preparation for the next one to come. Erikson describes personality as growing epigenetically from infancy to adulthood. Each success in developing some aspect of ego strength leads the individual into the next stage with greater chances of success. The epigenesis of the intellect is described by Piaget as having its beginning in simple sensory motor behaviors which merge into increasingly more complex and abstract ways of thinking. To each theorist, the sequence of the behavior he describes is more important than the proposed age correlates. Thus, a child may be precocious or retarded in terms his arrival at a particular stage of development but he cannot skip any one phase without subsequent distortion.

Erikson's stages in psychosocial development reflect his psychoanalytic orientation, his interests in cultural anthropology and his work with both healthy and sick children and their families. He proposes eight stages in the development of a healthy personality from infancy to adulthood (Erikson, 1950, Midcentury White House conference, 1951, Maier, 1965). Only the first five of these will be discussed here.

Erikson describes each stage in terms of a central psychosocial problem which must be satisfactorily resolved in terms of the individual's capacities at that time if he is to move on successfully to the next stage and the next problem. The resolution of the problem adds a positive, growth-producing attribute to the developing ego. The alternative is an ego-destructive attitude.

The first stage of personality growth takes place in the first year of life. The infant must develop a *sense of basic trust* rather than mistrust in himself and in others. In his helpless state, he must depend upon others to meet his needs for physical nourishment and care, for love and affection, for psychic and social stimulation. If these needs are met with warmth and with reasonable consistency, primarily by a mother-figure who he can recognize as "his", the infant comes to view the world as a safe, secure place and the people in it as dependable. The possibilities for the development of mistrust are made greater in the second half of the first year when the infant is capable of more sensory discrimination and when he is consolidating his relationship with a central mother-figure at the same time that she may be turning her attention increasingly to other responsibilities. There is considerable evidence that infants raised in institutional settings or shifted about from one caretaker to another without the opportunity to form a close social attachment may be permanently impaired in their ability to form such attachments.

If the infant has developed a sense of basic trust he moves on to the next stage of ego development in which he dares to make demands upon his environment. He wants freedom to exercise his developing physical powers, to do more things for himself like dressing and eating and going outside alone. He wants to make some of his own choices. In short he wants to be respected as an individual. Unless the 2-3 year old acquires a healthy *sense of autonomy* he may be psychologically handicapped by a sense of shame, shame for having over-extended himself and failed in his own eyes and in the scolding eyes of others. During this age period, children are usually poor judges of what they *can* do regardless of what they claim to want or try to do. They need kindly but firm guidance from adults who can set clear and consistent limits while respecting the child's desire for independence, from adults who will grant reasonable choices, will prevent undue frustrations, will protect him from his own impulses. The child needs adults who will help him to reaffirm his trust in people and in himself.

Of special importance to the child somewhere between three and five years old is the development of a *sense of initiative.* Physical maturation, emerging language skills and intellectual abilities contribute to a seemingly insatiable curiosity. The child of this age wants to know how, what and why about everything from clocks and goldfish, to the roles of people he observes to special events such as holidays and births and deaths. At no other time in his life is he likely to be so eager to know, to learn. Adults can foster this spirit by encouraging and even stimulating his questions, by offering varied experiences with people, places, things and providing the freedom to integrate these experiences at his own rate through play. But the curiosity of the child often leads him to intrude upon the possessions and privacy of others or to ask questions adults are embarrassed to answer: his vivid imagination may cause him to wish for the impossible; he may show difficulty in differentiating fantasy from reality. At times such as these he is vulnerable to a sense of guilt which, Erikson warns, can stifle his courage to thrust forward if given undue emphasis.

The child who has developed a sense of basic trust early and has had it reaffirmed during the past five years, who has acquired a sense of independence and self-respect, who can show initiative through active confrontation with his environment is now ready to develop *a sense of accomplishment* to fortify him against a feeling of inferiority. The child at this age is no longer interested in doing things for the sake of doing; his activities have greater purpose and he wants the feeling that he can do at least some of them *well.* Work habits including the self-discipline to finish what one begins are important aids to the feeling of accomplishment. Parents and teachers can help a child to find areas of success but the success must be earned through confrontation with an appropriate challenge. Tasks that are too easy will bore him, tasks that are too difficult will discourage. Erikson believes that the successful resolution of each of these five tasks is a prerequisite to the development of a sense of identity which confronts the adolescent.

The five stages of personality development outlined here might be used as reference points for developing and/or evaluating a preschool program.

In contrast to Erikson's concern for development which emerges from interpersonal interactions is Piaget's description of cognitive changes which take place within the individual apart from the feelings, attitudes, beliefs or specific experiences of the individual or of those around him. Piaget accepts the possibility of environmental influences on cognitive achievements but he does not choose to deal with these. His detailed account of intellectual development in the first two years is based almost exclusively on systematic and minute observations of his own three children. Data for his description of what about and how children think at later developmental levels have been amassed from countless interviews with children of all ages.

Piaget defines five major developmental periods of cognitive development, the second of which is most important to us here. He calls the first development period the sensori-motor period of intelligence, which extends from birth to about two years of age. "During this important first period, the infant moves from a neonatal, reflex level of complete self-world undifferentiation to a relatively coherent organization of sensori-motor actions vis-a-vis his immediate environment. The organization is an entirely 'practical' one, however, in the sense that it involves simple perceptual and motor adjustments to things rather than symbolic manipulations of them." (Flavel, 1963)

Three of the several specialized intellectual achievements which have their origin in the sensory-motor period are a mature object concept, imitation, a concept of space.

To the very young infant object and self are not clear entities. Only gradually does he recognize that objects exist apart from him, whether he touches them or not and whether they are in sight or not. It is this recognition that Piaget calls the mature object concept.

The evolution of the child's grasp of space parallels closely that of objects. In the beginning there is only a vague collection of unrelated spaces tied to his own sensations, i.e. visual space, auditory space, tactile space. As he sees himself apart from other objects, he becomes interested in spatial relations between himself and objects and among objects. He pushes things and watches them move away or toward him. He stacks series of objects one on another, puts objects into containers and dumps them out. With greater mobility he practices getting to a place by different routes. He moves away from his mother and returns to her, "feeling" distances.

Imitation begins with imitating responses already in the infant's reportory which he can see or hear such as the opening or closing of a hand or movements of the mouth. Later the infant imitates new responses he can see or hear. By age 2 he is able to imitate from memory such as the child who imitates the dog licking his dish long after he has seen the dog. Practice in imitating encourages awareness of differences, especially in social events. Imitation of an absent model is an important achievement which blends into later stages of symbolic representation.

The second and preoperational period of thinking extends from about two years to about six or seven years of age. The salient characteristic of this period is the development of *representational thought and the symbolic function.* During infancy, the sight or name of a familiar object immediately evoked the pattern of action associated with that object. At about two years, the child begins to differentiate signifier (names, pictures) from significates (the objects they represent). As this differentiation takes place, the signifiers become symbols for the objects they represent. These symbols can then be manipulated by the child (i.e. thought about) independently from the action pattern that would be evoked by the object itself. For example, before the preoperational period, the word "ball" would immediately evoke looking for the familiar ball. After the child has begun to differentiate the word from the object, the word "ball" may evoke repetition of the word or elaboration (i.e. "red ball"), suggesting that the child can "think about" the ball in its absence. During the preoperational period, this representational thought is still new to the child, and he does not use it as effectively as he will later.

One characteristic of preoperational thought is that it is *ego-centric.* This means that the child is able to think about and see things only from his own perspective. He is unable to take the role of the other person. For example, in some of the stories that Piaget tells to children the child is not able to answer questions about the story in terms of the thoughts and motives of the character in the story, but only in terms of his own thoughts and motives. If presented with a three-dimensional visual display (e.g. a mountain with a building on top and some figures on the sides), he is unable to tell what the display looks like to a person sitting opposite him. Another characteristic of egocentric thought is that the child cannot think about his own thinking. He thinks unselfconsciously, and after reasoning through a problem, cannot reconstruct his reasoning.

Another characteristic of preoperational thought is that the child *centers* on a single, striking feature of an object to the neglect of other aspects. For example, if the same amount of water is poured into a beaker and into a tall, thin tube, the child will say that the tube contains more water, because it is taller. The tallness is the most striking feature of the tube and the child centers on this, neglecting to see that the tube is also narrower, which compensates for its tallness. The child cannot decenter and consider several features at once and the balancing effects they may have on each other.

Closely related to this tendency to center on salient characteristics is the tendency for the young child to think in concrete rather than abstract terms. This may seem like a contradiction, since we have just said that the child has developed representational or symbolic thought. However, Piaget conceives of this earliest symbolic representation as the internalization of overt action patterns. In other words, when the young child hears the word "ball," he may not overtly look for the ball, but he mentally goes through the action pattern of looking for and playing with the ball. Thus, Piaget calls the child's earliest cognitions *"mental experiments."* As the child watches the water being poured from a beaker to a tall tube, he is focusing on the successive concrete states of the transformation, rather than on the process of the transformation. This concept of a mental experiment, rooted in internalized concrete action patterns, helps explain why the child cannot reconstruct or reverse his thought patterns.

The characteristics of egocentrism, centration, and concrete thought lead to a type of reasoning in which the child connects ideas by association or juxtaposition. These associations are based on surface similarities or on personal associations from the child's own experience. Because the child's ideas and thought processes are constantly shifting from one concrete situation to another, his cognitive organization is relatively unstable and not very well integrated. For example, you may present to a preschool child a beaker and a tall tube, into each of which you pour the same amount of water. At one moment, he may say that the two containers have the "same" amount of water, because you put the same amount into both. A few minutes later he may say that the taller tube has "more, because it is taller." He will not see that his two statements are logically contradictory.

The *periods of concrete* and formal operations may be described more briefly, in relation to what has gone before. The period of concrete operations extends from about seven to eleven years of age. The essence of this period is that the relatively unstable cognitive sturctures and processes of the preoperational period become organized into coherent and integrated cognitive systems. These new systems (which Piaget calls operations) permit the child to organize and manipulate the world around him in ways he could not before. The child can now consider several features of an object or situation at once, and may realize that one feature may balance or compensate for another. In the problem of pouring water from a beaker into a tube, he is aware of the process of transformation, as well as the successive states of the substance. He is able to reconstruct and reverse his thought processes. As he becomes less egocentric, he begins to see himself as a person with one point of view among many people with many different points of view.

During this period, the child is still using these new systems or operations to deal with concrete situations, but more efficiently than he could in the preoperational period. In contrast to the earlier period, he *can now extend his thought from the actual to the potential.*

This involves making simple generalizations which may be applied to new content. However, this movement beyond the concrete is limited in scope and *occurs only occasionally.* The concreteness of the child's operations is further illustrated by the development of the understanding of conservation of mass (change of shape does not affect amount of substance), one might assume that he has mastered the principle of conservation. However, Paiget's studies have shown that children do not understand conservation of weight and volume until some time after they understand conservation of mass. Thus, the concrete-operational child does not have what Flavell calls "a content-free, once-for-all structuring."

This represents a very small sampling of Piaget's theory of cognitive development. His writings are profilic. It is hoped that the teacher will search further for relevance of Piaget's materials to his own age group. Certainly, Piaget's techniques of observation and experimentation should encourage us to look at children in new ways, to listen and observe more extensively, to consider the meaning of their *mis*conceptions as well as their concepts, to marvel at the way children function within primitive levels of thinking.

PRESCHOOL PROGRAM OUTLINE

The following outline is based on the assumption that a preschool program will provide for development in all areas (AC&I, 1966). Some general suggestions are made for how this might be done in each area to serve as illustration. The preschool program should promote:

- *Emotional development.* The child should be helped to recognize and accept his feelings honestly at the same time that he is helped by teacher suggestion and support to express these feelings in socially approved ways. He should be helped to handle frustrations as they arise; the wise teacher will know when to step in and help before the situation becomes overwhelming.

- *Physical development.* Provision should be made for both large muscle and small muscle activities, with time allotted to each determined by the needs of the individuals in the group. Activities to promote balance using both large and small muscles. Activities to promote understanding of spatial relationships using the self as the reference point.

- *Social development.* The preschool child normally progresses from an ability to work alone, to success in a partnership to ability to work cooperatively in a small group. Since independence as well as cooperation is to be valued, there should be opportunity for some free choice here. Consideration for others, good work habits and a sense of responsibility contribute to his social competence.

- *Cognitive development.* The ability to deal with symbols, to think in abstractions grows out of many concrete sensory-motor experiences. He must form an infinite variety of concepts; that is, he must learn the distinguishing features of various stimuli and be able to classify them in meaningful and useful ways. He must form concepts of things, of people, of events, of feelings, of time, space and quantity. To do this he must have many experiences in making sensory discriminations, in observing cause and effect relationships, in solving problems, in predicting and evaluating behavior.

- *Language development.* Language has many functions for the preschool child. It gives pleasure, it enables him to identify with others, it can serve as an emotional outlet, it helps to structure and to reinforce his behavior, it provides a medium of communication with others, it facilitates thinking. Young children need many experiences for speaking and for hearing language spoken in all of these contexts.

When language is directly associated with the child's day to day experiences it takes on meaning and somehow he learns the system including grammatical rules. 'Language-deprived' children may need special help in concretizing certain parts of speech such as prepositions and connecting words.

- *Moral development.* The preschool child is in the process of developing a conscience. He tends to see rules as invested in the adult, to judge acts by their consequences instead of by the intention of the doer. Explaining the why of rules, discussing intentions and setting an example of flexibility-with-consistency will help him to internalize meaningful guides for his own behavior.

In Summary: The preschool program should be geared to helping children to handle the developmental tasks characteristic of their age group while anticipating individual differences in the need for stimulation and in the rate of development. We can gain some insight into what these tasks are by studying the work of Erikson and Piaget and of experienced teachers sensitive to the needs and abilities of young children. Important social-emotional tasks of the four-year-old include the development of an age-appropriate sense of independence, a sense of self-respect, a sense of initiative, spontaneity and creativity, a sense of responsibility and the willingness to use it and a sense of accomplishment. The development of motor, intellectual and social skills help him to conceptualize his expanding world in a orderly way and begin to communicate, to think and solve problems on a progressively more abstract level.

Competence at any one age group, i.e. the ability to be all that one is capable of being at the time, is certainly a sufficient goal of any educational program in itself. It should not be necessary to justify any program solely on the basis of its contribution to later growth. It is the nature of our development that a good foundation paves the way for a stronger structure.

While the special needs of any individual or group will influence what is to be emphasized in the curriculum, the overall goals of a good preschool program are the same. No area of child development should be neglected because all areas of development are interrelated.

Bibliography

A C & I. *Basic Propositions for Early Childhood Education.* Washington, D. C.: Association for Childhood Education International. 1966.

Erikson, E. *Childhood and Society,* New York: Norton. 1950

Flavel, J. *The Development Psychology of Piaget.* New York: Van Nostrand. 1963

Jensen, A. "Learning in the Preschool Years", in *The Young Child: Reviews of Research,* W. Hartup and N. Smothergill (eds.) Washington, D. C.: National Association for the Education of Young Children. 1967

Maier, H. *Three Theories of Child Development.* New York: Harper & Row 1965

Midcentury White House Conference on Children and Youth. "A Healthy Personality for Every Child" in *The Causes of Behavior.* Rosenblith, J. and W. Allinsmith (eds.) Boston: Allyn Bacon 1962

Stone, L. J., J. Church, *Childhood and Adolescence.* New York: Random House. 1968 2nd. ed.

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BIBLIOGRAPHY #3: PRESCHOOL GROUPS

A. General References

1. Christianson, Helen and Mary M. Rogers and Blanche Ludlum. *The Nursery School: Adventure in Living and Learning.* Boston: Houghton Mifflin Company, 1961. $4.25.

   Discusses the nursery school as a children's community. Discussion of observation techniques and the development of nursery school education. Good bibliography.

2. Hammond, Sarah Lou, R. H. Dales, D. S. Skipper and R. Witherspoon. *Good Schools for Young Children.* New York: Macmillan, 1963. $6.50.

   Discussion of nursery school, curriculum, and organization of programs.

3. Hartley, Ruth and R. M. Goldenson. *The Complete Book of Children's Play.* New York: Crowell, 1957. $5.95.

   A Comprehensive discussion of play and play materials. Detailed section on books, films. Extensive bibliography.

4. Logan, Lillian, *Teaching the Young Child: Methods of Preschool and Primary Education.* Boston: Houghton Mifflin, 1960. $6.00.

   A discussion of the nursery school child, his environment, and his teachers. Many anecdotes used to show the child's world.

5. Moore, Sally Beth and Phyllis Richards. *Teaching in the Nursery School.* New York: Harper and Brothers, 1959. $5.50.

6. NAYEC. *Montessori in Perspective.* Washington, D. C.: NAYEC 1966 $2.00 (paperback).

7. Osborn, D. K. and D. Haupt. *Creative Activities for Young Children.* Detroit: The Merrill-Palmer Institute, 1964. $1.50.

   Suggestions of creative activities for young children. Emphasis on inexpensive materials. Extensive bibliography.

8. Read, Katherine, *The Nursery School: A Human Relations Laboratory.* Philadelphia: W. B. Saunders Co., 1960. $4.25.

   Book provides general information about nursery schools, children in groups, etc. Good general coverage of topic. Extensive bibliography.

9. Sheehy, Emma D. *Children Discover Music and Dance.* New York: Henry Holt, Inc., 1959. $4.25.

   Excellent source for teachers. Practical suggestions, resources for singing, creative rhythms, records, and sound.

10. Todd, V. E. and H. Hefferman. *The Years Before School.* New York. The Macmillan Company, 1964. $7.50.

Thorough discussion of nursery school curriculum. Discussion of various types of preschool groups. Good section on parent education.

11. Wann, Kenneth, M. E. Dorn and E. A. Liddle. *Fostering Intellectual Development in Young Children.* New York: Bureau of Publication, Teachers College, Columbia University, 1962. $1.95.

    Study concerned with ways to enrich children's programs. Investigation of children's concepts. Role of teacher in fostering intellectual development.

12. Ward, Muriel. *Young Minds Need Something to Grow on.* Evanston Ill.: Row, Peterson and Company, 1957.

    Description of methods of stimulating meaningful thinking of young children.

B. The Culturally Disadvantaged Child

Hechinger, Fred (ed.). *Preschool Education Today.* New York: Doubleday 1966. paperback $1.45.

Contains articles by Martin Deutsch, McVicker Hunt, Bereiter and others on new approaches to teaching 3-5 year olds.

Bereiter, C. & S. Engleman. *Teaching Disadvantaged Children in the Preschool.* New Jersey: Prentice Hall. 1966.

Presents controversial curriculum for disadvantaged children with emphasis on language, math, reading.

Bloom, B. J., A. Davis, and R. Hess. *Compensatory Education for Cultural Deprivation.* New York: Holt, Rinehart & Winston, 1965 $1.50.

Based on working papers contributed by participants in Research Conference on Education and Cultural Deprivation. Summary of nature of cultural deprivation as it relates to educational process. Extensive annotated bibliography.

Gray, S. *Before First Grade.* New York: Teachers College Press. 1966 $2.95 (paperback)

Reports on philosophy, organization and results of an experimental preschool program for disadvantaged children. Many helpful suggestions for teachers of such children anywhere.

Journal of Marriage and Family. Vol. 26, 1964. Collection of articles on cultural deprivation.

Young Children. See issues since 1965.

A Preschool Program in Relation to the Nine "Maximizes"*

Dr. Mary Jane Strattner
Child Development: University of Delaware

Almost any experience, material or activity that can advance the young child's understanding of himself and his world is considered appropriate "subject matter" for the preschool curriculum. The readiness of the individual children involved, the interest and creativity of the teacher and the philosophy of the particular school should determine the curriculum. Selectivity is also influenced by available time and facilities.

The outline of suggested activities for the preschool program within the 9 maximizing areas assumes certain basic conditions for learning in this environment.

1. That adequate space is provided for the activity mentioned.

2. That appropriate materials are available to stimulate and maintain the experiences.

3. That there will be opportunities for the child to learn on each of 3 different levels (all assume pre-planning on the part of the teacher).

   a. *free exploration* in which the child discovers the desired learning.
   Eg. Teacher provides measuring spoons in hopes that child will notice size differences.

   b. *guided discovery* in which teacher structures environment so that a particular learning is a necessary part of the school living.
   Eg. Silhouettes of the different size measuring spoons are provided with hooks. As the child returns spoons to proper places he must discriminate sizes.

   c. *direct teaching* in which the teacher and children compare sizes and capacities of spoons as they measure ingredients for a cooking project.

**Presented to faculty of Margaret Sterck School, Delaware, July 12, 1968*

Preschool Program and Nine Maximizes (cont.)

1. *VISUAL LEARNING* (independent of auditory reinforcement)

Table games requiring visual discrimination

- Puzzles, lego blocks, picture lotto, matching games involving color, size, shape matching, pairing of objects, etc.
- Flannel boards using geometric shapes as well as shapes and pictures of real objects and illustrations of concepts of any kind.

Storage arrangements which give clues to what goes where and which are within child's reach

- Unit blocks stored according to size and shape.
- Art supplies grouped according to some logical order and placed in baskets or boxes.
- Special containers for small objects such as beads, blocks, animal and doll figures.
- Silhouettes or pictures to identify storage arrangement of some things.

Plastic materials that allow children to form different shapes and work in varied colors, eg. paint, play dough, collages.

Collections of objects from nature, comparing, grouping. Eg. leaves, rocks, shells, bugs.

Labeling of children's lockers and personal possessions using pictures, symbols, letters, colors. Also labels on equipment, shelves, cupboard doors, etc.

Photographs, particularly of things and people and places familiar to the children will give them practice in associating pictorial representations with the real thing encourage discrimination of detail since interest in examining such pictures is high.

Movies, if short and, if related in some way to other things children have done or will do

Activity games (see 9 coordinated use of 2 or more senses).

Room arrangements – Teachers might vary arrangement of picture displays, furniture, objects, etc. to illustrate specific concepts. Eg. Chairs may be arranged in orderly sets of graduates sizes rather than the usual higher ones together and smaller ones together or in unusual arrangements, lunch tables or work tables might be arranged in a circle or in a triangle, all objects might be grouped according to color or according to material from which made.

Note: Arrangement of room to locate play areas, i.e. housekeeping, blockbuilding, painting, table games, etc. is a visual experience in categorization itself, but occasional rearrangements add an element of novelty and draw attention to details.

2. *A SENSE OF PHYSICAL BALANCE AND COORDINATION*

Large muscle activities – climbing, pushing, pulling, building with large boxes or blocks, swinging.

Small muscle activities – using small size building materials, working with art materials, such as paints, crayons, chalk, paste, play dough, water play involving pouring, etc.

Imitative "stunt" games and rhythm games
Eg. Practice hopping over blocks in different ways – eg. arms close to side, arms flung out, hands on head, etc.

Experiences connected with lunch time – i.e. setting table, serving food, pouring milk

Note: See Dehart, "What's Involved in Being Able to Read?" *Young Children.* March 1968.

3. *DRAMATIZATION OF PERSONAL, GROUP OR LITERARY EXPERIENCE*

Free dramatic play in areas set up to encourage, i.e. housekeeping area, block area, with trucks, etc.

Small group dramatization of stories or films.

Field trip -- instigated role playing – i.e. in *making plans* for how to walk, to greet host, to ask questions, to say "thank you," to behave enroute.

In reviewing experiences on trip, such as way animals behaved, what the barber did, etc.

Note: *Children dramatize spontaneously* to integrate experiences for better comprehension or resolving of anxieties, to try out roles, to practice being "big" as a way of anticipating and rehearsing for events, as a way of expressing strong feelings, as a way of "making sense" of their new discoveries.

4. *WRITTEN AND/OR PICTORIAL COMMUNICATION FACILITY*

Sometimes pictures and plastic "representations" of young children can serve to communicate; but this is infrequent for most normal children under 5.

More often the young child's medium of communication is

- block structures
- dramatic play
- his arrangement of toys or possessions available
- through play with "doll families" and small objects which represent reality to him

One of the basic functions of the preschool is to help the child (especially the language-deprived child) *move from a sensory-motor intelligence to conceptual intelligence;* to develop a system of symbolization that will facilitate reading skills to come later. To do this, the child must first gain a thorough familiarity with objects in the concrete, then practice mental representations of the objects – i.e. "hold" them in his mind and *think* about them. He must learn of recognize objects on the basis of *fragmentary parts* (eg. ringing of telephone, sound of drum) and later via symbols used to represent the objects such as imitative gesture or sounds or pictorial representations. Eventually, the written *word symbol* will call forth the picture of the object in his mind and he will be able to read and to express his thoughts in writing. Prior to this, however, he must have practice with the *spoken word* symbol. See Sonquist & Kamii, "Applying some Piagetian Concepts in the Classroom" *Young Children.*

The child must also have "concretized" experiences with the more abstract concepts of time, distance, size, quantity, etc. See #9.

In order to form concepts, child must be able to *interpret* information he receives, i.e. be able to classify, differentiate, organize information he receives.

5. *RHYTHMIC SENSATION* ranging from music to voice discrimination.

Free style dancing and body expressions to rhythm of records or simple instruments.

Group rhythm experiences such as rolling, swinging, swaying, marching, clapping, etc. which involve all or part of the body.

Use of simple instruments by children. Eg. clapping blocks, drums, bells, triangle.

Individual and group vocal experiences in varying one's voice to fit different moods, occasions and animal and human models. Eg. the angry king or the lost baby duckling.

6. *NON-VERBAL COMMUNICATION BEYOND READING*
(gestures, facila expression, etc.)

Pantomime games in which children express in gesture and movement and expression what they did on a summer holiday, a day in winter, Easter Sunday, etc.

"Guess how I feel"–type games in which children use non-verbal expressions to depict feelings and moods.

Role-playing of appropriate gestures, expressions, behaviors for specific social occasions, such as a trip to the restaurant, a ride on the bus, etc. Here, teacher introduces setting and helps children to demonstrate.

Imitative games with teacher and children taking turns as "leader." Sentences, situations, poems, stories may be the subject.

7. *TECHNOLOGICAL EXPENSIONS OR MAGNIFICATION OF NORMAL SENSES*

Magnifying glasses, simple microscopes

Films or video tapes of children themselves in action, viewed by them later.

Stories on film and tape

Models of objects (fruits, animals, mountains, etc.) and of places (hospital, town, farm) and of relationships, such as animal families mountain streams and waterfalls, etc.

Teaching machines

8. *INDEPENDENT ACCESS' RETRIEVAL AND EVALUATION*

Self-help environment such as having equipment, supplies, personal storage facilities within child's reach. Child is encouraged to use regularly with teacher's help when necessary.

Self-help routines such as lists with symbols which children understand so that they can check on individual responsibilities and perhaps record their own completion of a task.

Self-help opportunities at mealtimes (being allowed to pour own milk from plastic pitchers, etc.), at toileting, grooming, and dressing areas.

Evaluation opportunities following field trips, looking at films, having a visitor, etc. in which children are encouraged to talk about and to dramatize what they got out of the experience.

Note: Preschool children will spontaneously dramatize experiences some days later, if given a few appropriate props.

9. *COORDINATED USE OF TWO OR MORE SENSES*

Sensory-motor activity is the principal way young children learn. This means that 2 or more senses are involved, including the kinesthetic "sense". The young child learns best when he is motorically involved or when he is physically the center of the learning.

For example: To understand meanings of *prepositions and connecting words* in language, the child should experience going *under, up, around* bodily. He *and* his friend *and* other people can be added.

To comprehend *shapes* as circles, squares, triangles, he might sit or stand in a human formation.

Animal and science study offers opportunities for doing, feeling, smelling, hearing in combination.

For example: Concepts of gentleness, care, patience, consistency, and others are important in care of animals and plants.

NEWARK SPECIAL SCHOOL DISTRICT

NEWARK, DELAWARE

OFFICE OF INSTRUCTIONAL SERVICES

STERCK SCHOOL PROJECT – SUMMER 1968 – SCIENCE

Catharine Y. Bonney
Science Supervisor

SCIENCE FOR HEARING IMPAIRED

A. What in your subject area can be used to maximize—

1. Visual learning

   Science, taught as a laboratory course, can maximize visual learning to a great degree. Before a child learns to read, he can be taught to observe changes taking place around him. The natural curiosity of children makes it possible for one to capture their interest without the use of the spoken word. Try conducting a science demonstration in silence and see how things progress. Keep science material within the reach of children, and let them explore on their own. Many ideas contained in this project represent a maximum use of visual learning.

2. A sense of physical balance and coordination

   Learning to use science equipment effectively requires a degree of manual dexterity. Even though complete body balance is not always involved, the need for muscle coordination is evident. There are some experiences that an imaginative science teacher can introduce which will involve complete physical balance. Use a plank as a lever and see what happens.

   As for muscle coordination, wiring circuits, focusing a hand lens, weighing on a balance scale are just a few skills which a child can develop.

3. Dramatization of personal, group, or literary experiences.

   Look into the history of science and dramatize some of the well-known events. Franklin with his kite, Morse with the telegraph, etc.

4. Written and/or pictorial communication facility

   Have the students draw the equipment that they use with their experiments. Write illustrated experience stories after a science trip.

5. Rhythmic sensation ranging from music to voice discrimination

   Sound experiments in the science program lend themselves to an emphasis in this area. See the ideas included in this project.

6. Non-verbal communication beyond reading

   Explain symbols to which a person should learn to respond: traffic lights, street signs, poison signs, etc.

7. Technological extensions or magnifications of the normal senses

   See project.

8. Independent access, retrieval, and evaluation

   "Shoe-box Science" is one answer to this request. Gather equipment needed for simple experiments and store in shoe-boxes. Permit children to check these boxes out the way they would borrow a book.

   Collect programmed science material and make it available on a loan basis.

   Have film-loop projectors for student use.
   Have models of parts of human body for student study.
   Encourage science hobbies: collections, etc.

9. Coordinated use of two or more senses

Set up an oscilloscope equipped to show sound waves. Compare "pictures" of music, noise, loud and soft tones, etc.

B. What possibilities, if any, do you see for profitable use of

1. Typewriters

Type experience stories, experiments, weather reports, bulletin board announcements.

2. Telegraph

Build set; send and receive between rooms. Use a light signal if hearing is too impaired.

3. Polaroid Camera

Photograph steps of an experiment. Record student projects. Make "Mystery Pictures".

4. Microscopes

See project.
Use microprojector to show live daphnia, paramecium, etc.

5. Telescopes

Make land observation.
Study phases of moon.
Observe planets.

6. Motors, electric or gasoline

Build electric motor. Take old motors apart. Study models of engines.

7. Locomotion devices

Visit Franklin Institute for a complete coverage of this. Build rockets and launch them. Use bicycle to study cimple machines that it contains.

8. Computers

Learn to operate.

9. Jukeboxes

Unnecessary.

10. Television

Many excellent programs are available day and night. Be selective.

11. Movies

Use filmloops. Make maximum use of movies.

12. Filmstrips

See school's TV list.

13. Braille

Learn to write it. People are needed to translate printed page into braille.

14. Animals

Caring for pets teaches responsibility. Children can learn a lot about living things by observing a pet.

15. Sign language

By all means!

16. Lip reading

Important!

17. Chemical that work

Many household items can be used with safety for interesting experiments: baking soda, vinegar, red cabbage water, etc. (Water from red cabbage makes a good indicator for acids and bases.)

Safety practices should be observed at all times. There is a state ruling that requires the wearing of safety glasses in the laboratory.

18. Mechanical drawing

Contributes to the legibility of science reports.

19. Abstract painting

For emotional release.

20. Cartooning

Useful in illustrating science experiences.

21. Acrobatic dancing

Helps develop balance.

22. Organs

Application to study of sound.

23. Electrical guitars

May be used in the study of sound.

24. Drums

Useful in the study of sound.

25. Colored lights

Useful for learning signals.

26. Temperature variation and control

See experiments in project.

27. Guage and measuring devices

Complete units on measuring are essential in science.

28. Calculators

Save valuable time when experiment data gets more complex.

29. Adding machines

Sames as 28.

30. Guns

These present a safety hazard since the person cannot hear the other person who might be using a gun.

31. Tools

Students should learn to build equipment for experiments

32. Sewing Machine

A good example of a complex machine.

33. Stoves

Students should learn how these operate.

34. Others

Camping gear – residence camping
Oscilloscope – to "see" sound
Signal light – send messages
Binoculars – bird watching

C. Do you see any areas of needed inventions?

Devices to help control weather.
Quiet air-conditioners
Safer systems of transportation

SCIENCE IDEAS

AIR

See IDEAS FOR PRIMARY TEACHERS, Gilbert Gardner.
Observe work of wind, make pinwheels, etc.
Let shallow pan of water sit in room for several days. Observe.
Let glass of cold water sit in room on humid day. Observe.
Blow your breath on cold mirror.
Observe dew on plants.
Observe frost.
Watch smoke from chimneys.

CHEMICAL CHANGE

Take two large nails. Paint one and let it dry. Hang both outside or wrap in wet newspaper. Observe results.

FORCE

Paper towels: Test wet strength; cut strips from different kinds of towels; make loops using scotch tape; wet strips; record distance they will stretch without tearing.

GRAVITY

See THAT'S THE WAY THE BALL BOUNCES, Robert Gardner.
Float boat in basin of water. Add marbles to boat. See how many marbles it takes before boat will sink. Explain what happens when too many people are in boat.

HEART

Feel pulse. Count beats. Walk around room rapidly and then count beats. Graph results.
Stethoscope: borrow from nurse and listen for heart beat.

LIGHT

Trace shadows on playground. Measure shadows at different times of day and compare. Measure length of flagpole shadow at noon once a week. In classroom use projector for light source for shadow work. Observe shadows that different shapes make. Make shadow pictures.

LIQUIDS

Diffusion – Use ink or vegetable coloring in jar of water.

Convection Currents –

Glass jar
Cold water
Small bottle with two-holed stopper
One glass tube to near bottom – other just through cork
Put hot colored water in small jar – set on bottom of large container of water – watch.

Capillary Action –

a. Two glass plates
Thin strip of wood
Rubber band
Fasten plates together with wood separating one edge. Set in colored water–watch.

b. Four containers of soil
Sand
Humus
Two clay
Add certain amount of water.
Observe each day.
Explain need for breaking up soil.
Let one clay sit.
Keep other cultivated.

MACHINES

Pencil sharpener: turn it at end of handle; turn it near sharpener. Which is easier? Try fastening a pencil or stick to make the handle longer. Is it easier to turn?

MOON

Draw moon in different phases. Place on calendar.
Observe phases of moon.
Look for moon in daytime sky.

PLANTS

Plant corn seedlings. Measure daily growth by using tapes. Place tapes on board to make graph.
Use oleo-dishes for growing pots.
Cut down milk cartons for plant pots.

SCIENCE ACTIVITY CENTER

A work surface – see table
A bookshelf – books and pamphlets on related topic
A display facility

a. Shelf – for small collections.

  Example: Twig
    Have question with the object on the shelf.

  Example:
    What kind of a tree is it from?
    What shape are the leaves of the tree?
    Will the tree have flowers on it?

b. Bulletin board

  Picture – with questions

c. Mystery Corner

  Picture
  Box with object in it – some clues.

Change these regularly.
Emphasize *Activity.*

SEASONS

Collect pictures to represent seasons.
Use picture symbols on calendar to represent start of each season for year.
Have children draw pictures to represent seasons.

Fall: Collect colored leaves. Compare with pictures.
Trace leaves on construction paper.
Collect weed seeds. Show how they travel.
Visit Outdoor Laboratory to see how park life prepares for winter.
Plant daffodil and tulip bulbs.

Winter: Put pan of water outside on very cold day.
Collect container of snow, melt and then measure.
Inspect melted snow. Pour through filter.
Examine snowflakes under microscope. (Keep microscope cold. Collect flakes on dark surface.)
Build bird feeder for winter birds.
Look for Orion, the Hunter, in the nighttime sky.

Spring: Watch for leaves.
Watch for tulips and daffodils.
Bring forsythia and pussy-willow branches inside and place in water. Watch development.
Watch for first robin.
Catch rainwater. Measure. Compare suds from it with suds from tap water.
Note time of sunrise and sunset.
Start seeds growing in classroom.
Look for Leo, the Lion, in nighttime sky.

SENSE OF SMELL

Use covered jars. Put common substances in them: vinegar, water, soap, cinnamon, etc. Blindfold children and have them identify things by odor.

SENSE OF TOUCH

Blindfold child. Have several items for child to feel: fur, wool, rubber, sandpaper, cotton, cellophane, etc.

SOUND

Feel the voice box. Growl or hum – feel vibrations.
Stretch rubber band over box. Pluck it. Notice vibrations.
Tap tuning fork. Feel vibrations. Touch vibrating fork to surface of pan of water. Place vibrating fork, prong side up, on board, window pane, etc.
Make drum from coffee can.
Cut other end from coffee can. Stretch balloon over one end. Put pieces of dry cereal on balloon. Yell in open end. Observe.
Add water to coke bottles at different levels. Tap bottles.

SUN

Keep record of time of sunrise and sunset.
Check location of sunrise and sunset for: first day of fall, first day of winter, first day of spring, and first day of summer.
Make a chart from midnight to midnight for a particular date. Shade dark hours. Compare with results months later.
Set thermometer in sun. Record.
Watch shadows.

SURFACE TENSION

Fill a glass to the top and almost overflowing.
Put a drop of detergent on and see what happens.
Float a pin on water.
Float a plastic berry basket – add a drop of detergent.
Blow bubbles from soap suds. Use wire loops in different shapes; put in solution and remove. Observe film.

THERMOMETER

Make a large cardboard thermometer using movable red ribbon to represent fluid. Set each day.

WEATHER CLOCK

Mount large cardboard disk on background.
Label background: TODAY'S WEATHER.
Divide disk into six sections.
Label each section (optional).
- Rain
- Cloudy
- Fair or Sunny
- Snow
- Windy
- Calm

Draw pictures to illustrate each section and paste on.
Fasten two cardboard pointers through center so that they can be moved by hand.
Position of pointers may need to be changed during the day.

FOR MORE IDEAS

Ask to have your name put on the mailing list:

Ward's Elementary Science Workshop Notes
Ward's Natural Science Establishment, Inc.
P.O. Box 1712
Rochester, New York 14603

ESS Newsletter
Elementary Science Study
Educational Development Center, Inc.
55 Chapel Street
Newton, Mass. 02160

Delaware Oil Men's Association
P.O. Box 449
Dover, Delaware 19901

Educational Affairs Department
Ford Motor Company
The American Road
Dearborn, Michigan 48120

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Science and Children
NSTA

STERCK SCHOOL PROJECT – SUMMER 1968

Guide for academic area position papers – applying the disciplines to problems of the hearing impaired

(Item #III in the Master Outline)

A. *What in your subject area can be used to maximize –*

1. Visual learning (independent of auditory reinforcement)
2. A sense of physical balance and coordination
3. Dramatization of personal, group, or literary experience
4. Written and/or pictorial communication facility.
5. Rhythmic sensation ranging from music to voice discrimination
6. Non-verbal communication beyond reading (gestures, facila expressions, etc.)
7. Technological extensions or magnifications of the normal senses (everything from typewriters to telescopes)
8. Independent access, retrieval, and evaluation (including material suitable for residence hall use)
9. Coordinated use of two or more senses (for example, seeing a radar profile on a T V screen.

NEWARK SPECIAL SCHOOL DISTRICT

Margaret S. Sterck School
for the Hearing Impaired

Newark, Delaware 19711

SCIENCE ROOM EQUIPMENT **CATEGORIES TO BE MAXIMIZED**

Item No.	Description	Age Group	1	2	3	4	5	6	7	8	9
1.	Aneroid Barometer	9-11	x			x			x	x	x
2.	Thermometer, F Mounted	4-6, 7-8	x			x			x	x	
3.	Thermometer, C&F yellow back	7-8, 9-11, 12-14	x			x			x	x	
4.	Triple Beam Balance	12-14	x						x	x	x
5.	Spring Balance	9-11	x			x			x	x	x
6.	Glass Prisms	12-14	x	x		x			x	x	x
7.	Demonstration Lenses	9-11	x	x		x			x	x	x
8.	Microscopes, etc.	7-8, 9-11, 12-14	x			x			x	x	x
9.	Microprojector	12-14	x			x			x		x
10.	Hand Lenses	7-8, 9-11, 12-14	x	x		x			x	x	x
11.	Stereo-microscopes	12-14	x			x			x	x	x
12.	Tuning Forks	7-8, 9-11	x	x		x	x		x	x	x
13.	Battery, Wire, Push Button, Receptacle, Lamp, Bell	9-11, 12-14	x	x		x	x		x	x	x
14.	Telephone Station	9-11, 12-14	x		x	x	x		x	x	x
15.	Magnets, Filings, Compass	7-8, 12-14	x	x					x	x	x
16.	Pulleys, etc. (Hooked Weights, Spring balance)	7-8, 9-11	x	x		x			x	x	x
17.	Radiometer	12-14	x						x	x	x
18.	Washington School Collection (Rocks and Minerals)	9-11, 12-14	x							x	x
19.	Test tubes, flasks, beakers, burners, tubing, tongs, etc.	12-14	x	x							
20.	Hygrometer	12-14	x			x			x	x	x
21.	Celestial Globe Star Chart	7-8, 9-11, 12-14	x							x	x
22.	Meter Sticks	9-11, 12-14	x	x						x	x
23.	Ear Model	7-8, 9-11, 12-14	x						x	x	x
24.	Eye Model	9-11, 12-14	x						x	x	x
25.	Aquarium Sets	all ages	x	x						x	x
26.	Egg Incubator	4-6, 12-14	x	x							x

NEWARK SPECIAL SCHOOL DISTRICT
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STERCK SCHOOL PROJECT – SUMMER 1968

"CENTS" IBLE SCIENCE EQUIPMENT FROM A TO Z

AIRPLANE	Use paper models to teach the principles of flight. See Chapter 6 of *Science Today for the Elementary School Teacher,* Navarra and Zafforoni.[1]
BAGGIES	Use for experiments with air. Collect water animals.
BALL	See "That's the Way the Ball Bounces by Robert Gardner. Study shadows of balls. Use as models of members of solar system.
BALLOON	Use for experiments with air. Fill with helium. Include a message. Release on a windy day. Wait for replies. Explain how a jet flies. Make a barometer. See p. 144 of *The Teaching of Science in the Elementary School* by Lewis and Potter.[2] See page 141 of reference #1. See Mr. Wizard's Experiments in Science.
BRICK	Measure it. Weigh it. Set it in the sun along with other objects and compare temperatures.
BUTTONS	Sort according to color, size, texture, number of holes, etc. Fasten on end of string for pendulum. Count in piles of ten, etc.
CANS	Make drums from coffee cans. Punch holes at various depths to show differences in water pressure. Punch holes in bottom to serve as sprinkler. Use one with screw cap to show effects of atmospheric pressure.
CANDIES	Show that fire needs air. Pour carbon dioxide over lighted candles. Use candle wax to attach thumbtacks to metal rod than heat end of rod. (conduction) Look at lighted candle with magnifying lens held at a distance. Make pinhole camera and look at lighted candle.
CORD	Use for measuring. Arrange different lengths from shortest to longest. Examine frayed end under magnifier.
CORK	Make compass with magnetized needle on cork in winter.
DETERGENT	Make suds for soap bubbles. Compare suds of soft and hard water.

EYE-DROPPER	Add a drop of ink to a glass of water and observe. Add stain to a specimen on microscope slide.
FABRIC	Sort samples according to texture. Put samples in bag. Have children identify by feel. Examine under microscope. Wash and place one in sun and another same kind in shade. Dress dolls for seasons. Use for curtains for puppet show. Put thermometers under dark colors and light colors and place in sun.
FEATHER	Examine under microscope.
FOOD	Introduce new foods by having a tasting party. Check with your cafeteria. Test for nutrients.
GERBIL	These cost a few "cents", but they make good classroom pets.
HAMMER	Pound a nail into wood, then feel the nail.
HOT WATER BOTTLE	Fit a rubber hose through stopper in neck. Attach a funnel to the hose. Place a brick on bottle. Pour water down hose into bottle and observe. Use a hose about three feet long.
IODINE	Test for presence of starch in foods.
JARS	Collect insects. Make terrariums from large mayonnaise jars. Make individual aquariums.
JOINTS	Collect animal joints to compare with action in humans.
KLEENEX	Test "Wet Strength" of varieties of tissues.
LEMON	Make a wet cell. Use dime and penny to generate electric current.
MARBLES	Use as bearings between two cans.
METAL	Collect scraps of metal for testing magnetism, finding density, etc.
MILK CARTONS	Cut down for plant containers. Use as support for single pulley. Use as support for windlass. Build elevators.
NAILS	Make electromagnets.
NEEDLES	Make magnetic compass.
NYLONS	Fasten bent clothes hanger. Use to collect living things from stream.
OLD MAGAZINES	Collect pictures for many purposes.

PANS	Disposable aluminum pans can be used for boats, and for many experiments. TV dinner containers are useful for sorting activities.
PLANTS	Measure growth. Show need for water. Show need for light. Grow from seeds. Grow from cuttings.
QUART JAR	Measure liquids.
ROCKS	To identify. See pages 184 to 189 of reference #1. Encourage collecting.
SEEDS	Collect weed seeds. Save seeds from Jack-O-Lantern.
SHOE BOX	Store equipment. Assemble equipment for individual experiment. Student storage of projects.
SODA STRAWS	Make soda straw balance.
SPOOLS	Make pulleys.
TAPE MEASURE	Measure growth of plants.
UMBRELLA	Past circumpolar constellations on under side.
VELVET	Catch snowflakes on black velvet. Then view under microscope.
WIRE COAT HANGERS	Cut them and bend them for many uses.
WOOD	Collect samples of many kinds of wood. Sort according to size, weight.
X-RAY	Collect old plates from doctor or dentist and examine.
YARDSTICK	Balance it for lever experiments.
ZEBRA FINCH	Makes a good pet.

NEWARK SPECIAL SCHOOL DISTRICT

STERCK SCHOOL PROJECT

1968

Juanita B. Crawford
Music Consultant

A. What in your subject area can be used to maximize –

1. Visual learning (independent of auditory reinforcement)

Filmstrips illustrating the lives of famous composers, the basic fundamentals of melody and rhythm, the instruments of the orchestra and musical stories provide excellent opportunities for using the visual learning method. Lyrics to songs or various rhythm patterns are easily demonstrated by using transparencies and the overhead projector.

Pictures of a symphony orchestra would help the student learn where the various instruments of the orchestra are usually seated. By watching pictures of instruments being played, the child can see for himself whether the sound is being produced by bowing, blowing, or striking.

Pictures are a valuable aid to illustrate various musical concepts, such as, high, low, fast, slow, loud, and soft. They can also add variety when teaching songs, and dances and also give the students some ideas when working on creative projects.

Charts and worksheets are also examples of visual learning. The use of charts will be discussed to a greater extent in later topics.

2. A sense of physical balance and coordination

Rhythmic activities should be designed so as to help the student to increase harmony between mind and body. A rhythm program should include exercises which help to develop basic rhythm, balance and body control and also powers of observation. These developments should assist in helping the child to develop a rhythmic flow of speech.

Rhythmic movement is included in the elementary music curriculum to help the child to gain control of movement. Rhythms and rhythmic movement aid in the physical development of children as moving to music provides the opportunity for developing muscular control and coordination.

Dancing and rhythmic movements help children to release tensions and to encourage self expression. To help children, through rhythmic experiences, to live richer lives and acquire a deeper appreciation of the esthetic world around them is a sound purpose for teaching rhythmic activities. Another purpose, as mentioned before, would then be to help the child to develop balance, poise, and gracefulness.

Clapping rhythms and other physical rhythmic responses are possible with many handicapped children as it gives them an opportunity to respond even if they can't sing or speak very well. Swinging, swaying, clapping, bending, and walking are the big rhythmic movements which involve the bigger muscles of the body. These big movements must be controlled and developed before the muscles can control the smaller movements.

To keep the interest of the students, variety is essential. Using various rhythm instruments for rhythmic activities is recommended. Bouncing balls and colored scarves are also very useful in rhythmic activities.

Physical movement is an essential part of the music curriculum, especially for the hearing impaired child as it provides an outlet for tension and frustrations which are believed to be more prevalent in this type of child.

Children are usually very eager to imitate. Some good examples of free imitation would be to have the child imitate ragdolls, snowflakes, giants, airplanes, turtles, elephants, etc. By imitating a known object, the child should also be encouraged to be creative. Learning to express his feelings through movement can be a successful experience especially for a handicapped child.

The child should also be taught various dance patterns and forms which should be presented after learning the basic rhythmic movements. There are seven basic rhythmic movements. They are (1) Walking; (2) Running; (3) Hopping; (4) Leaping; (5) Skipping; (6) Galloping; and (7) Sliding or sashaying.

The most effective way to teach these basic rhythmic movements is to start with the most natural, simple basic movements and proceed from that point. After some of these movements have been learned, they can be combined and, to add more variety, could be notated. Rhythmic instrumentation and creativity are also an important part of rhythms.

The basic step in the development of dance skills is the walking step. The fundamental steps mentioned above are the elements which form the structure upon which dances are built. It is easy to utilize and adopt many methods needed to meet the interest and varying needs of a student. The success of a rhythmic program is as unlimited as a teacher's willingness to create and encourage creativity.

There are also several basic dance steps that should be studied and integrated into the rhythms program. They are the (1) Two-step; (2) Schottische; (3) Step-hop; (4) Step-swing; (5) Step-draw; (6) Polka; and (7) Balance.

Square dances and folk dances such as the Virginia Reel can be successfully learned by the hearing handicapped child. By using imitation and counting, almost any type of dance can be a challenging learning experience.

An interesting dance most children enjoy is called the bamboo hop. The bamboo hop is based on the famous Phillipine dance, Tinikling. It is a dance-game performed with two bamboo poles. Two seated players strike the poles in time to the music while the dancers perform various step patterns hopping around and in between the poles. To master this dance and not to be caught between the poles is quite a trick which requires a great deal of skill. This activity could be quite an interesting one and also be quite a challenge especially to the intermediate age child.

For another activity, the child could create a walking exercise by first notating measure by measure the rhythm and then by acting out the various walking rhythms. To add rhythm instruments to this activity would be an excellent plan, assigning a different instrument for each type of note. This exercise can be used with any of the rhythmic activities as the occasions and situations warrant.

Another rhythmic activity which helps the child to develop a sense of physical balance and coordination would be that of participating in a rhythm band. A rhythm band is a name usually applied to a group of children playing percussion instruments. The instruments used in rhythm bands are fairly well standardized. The most common instruments used can be classified into three categories. They are as follows: (1) Melody instruments; (2) Wood rhythm instruments; and (3) Jingle rhythm instruments. The melody instruments are resonator bells or xylophones. The wood instruments are rhythm sticks, wood blocks, sand blocks, castanets and drums. Clogs, cowbells, cymbals, tambourines, triangles and jingle bells are some of the jingle instruments.

When initiating rhythm band activities, begin with the most simple exercises and then gradually advance to more difficult compositions. It is also best to begin by using only one type of instrument, then gradually add other instruments as the class advances.

It is important that the rhythm band scores be sufficiently simple so that they can be mastered without too much drudgery and drill. In order for this activity to be successful, the young players must enjoy their playing experiences. Too much enforced attention to technical details can destroy the pleasure and any educational value this activity is to contribute to the music curriculum.

A rhythm band can provide a valuable and challenging learning experience for the child. Participating in this activity helps the child to learn to work together with other class members, to create and compose, and to follow a leader or conductor.

Rhythm band activities could possibly be correlated with the *Threshold to Music* program as both activities teach the student to learn to read musical notation. The children should be instrumental in composing rhythm band scores, selecting the instrumentation and notation and also, have a turn in conducting compositions. A knowledge of the basic conducting patterns is usually easily learned by eager students. The entire rhythm band program can be as interesting and varied as the teacher will permit.

The most elementary and basic part of all rhythm is meter. A good rhythm program cannot be successful without a few lessons on time signatures and their relation to the musical language as meter in some form is present in all musical activities.

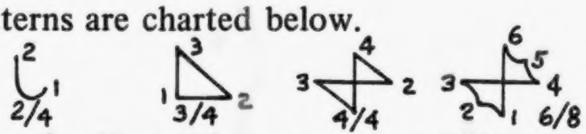
The main goal in this area is to teach the student to feel the meter. 2/4 is a good meter to use as an introduction. The following teaching methods could be utilized.

1. Have the child feel a strong beat followed by a weak beat played on the piano or a drum.
2. Show ////////on chalkboard.
3. Illustrate strong and weak beats by having one child play a large, loud rhythm instrument on the strong beat and another child play a small, soft rhythm instrument on the weak beat.
4. Have children march to this rhythm.
5. The students could be taught to conduct 2/4 time and take turns conducting this rhythm.

The above methods could also be used when teaching 3/4, 4/4, 6/8 etc. with a few modifications. 3/4 would be pictured ///////// and would be a swinging or dancing rhythm rather than a marching one.

Always chart the meter by using vertical lines. A longer vertical line (//////) or a short, straight horizontal line above the accented beat (|̄ | | |̄ | | |̄ | |) may be used to illustrate the beats to be stressed. After much basic experience with meter, the children should learn to identify meter by feeling and listening.

Conducting patterns are charted below.



After children are familiar with two or more different meters, meter recognition games could be played. Meter could also be a part of the child's auditory training experiences. There are many other possibilities that can be successfully fulfilled when the teachers' creativity is challenged.

3. Dramatization of personal, group, or literary experience

There are many musical stories, such as, Peter and the Wolf, Three Billy Goats Gruff, and Hansel and Gretel that can be dramatized by students. Ideas for such dramatizations can be found in most basal music series. The older Ginn series possibly has more of the fairy tale stories than any other series. Creativity should be an important part of the dramatization exercises and should be encouraged.

4. Written and/or pictorial communication facility

One of the most recent and revolutionary methods of teaching music reading is presented in the method called *Threshold to Music* by Mary Helen Richards. This approach to music is easily understood by most deaf children as it is taught by using large pictorial charts and encourages physical activity and responses.

The first activity Mrs. Richards presents is to teach the students to "feel the beat". This, of course, is a basic part of this program. The children soon learn to write their own rhythmic phrases and can identify rhythm patterns.

When this approach goes into singing activities, diatonic bells could possibly be a satisfactory substitute for the voice. Some children may hear the different pitches and should be encouraged to sing as they play. The further development of the material in this method into vocal sounds could be continued at the discretion of the teacher.

Hand singing is also an integral part of this program. This hand singing system was established for designating each of the tones of the diatonic scale by means of a hand and arm position. In this manner children, with or without normal hearing, discover they can "sing" songs silently by moving their hands and arms in rhythm as they progress from one signal to the next. Children especially enjoy guessing songs that other children sing silently for them.

Two of the objectives of *Threshold to Music* are: (1) To provide a well organized and thorough program for the development of basic music skills in the early grades; (2) To introduce and explain music fundamentals in a manner natural and interesting to children, to teach children to express themselves in music and enjoy its performance. These objectives are supported by the following three aspects: (1) The direct involvement of the children in music expression; (2) The careful and continuous development of music skills; and (3) The flexibility of the approach and its compatibility with other music programs.

Threshold to Music actively involves each student in the feeling and expression of music, both performed and written, right from the beginning. There is a music workbook called the *Musical Sketchbook* which accompanies the *Threshold to Music* program. This sketchbook allows the child to practice writing the musical language he is learning by means of the charts.

As attention is almost automatic, discipline problems are rare and enjoyment is almost universal. The children learn through participation and discovery. The keystone of *Threshold to Music* is continuity. Starting with simple basic ideas, this method adds to them gradually, a step at a time and continues to develop each previously learned skill along the way.

Physical education teachers and consultants at the elementary level will find this program of value in related development of rhythmic physical activities and exercises.

Let us now consider two points of view concerning the utilization of this method in the music curriculum. From the point of view of the music supervisor, *Threshold to Music* provides: (1) Continuity; (2) Basic skills development; (3) Involvement, enjoyment and understanding for children; (4) Interest and response on the part of the classroom teacher; and (5) Compatibility with the other music programs. From the point of view of the classroom teacher, *Threshold to Music* provides: (1) Attention-compelling charts, exercises, and participation; (2) An understandable lesson plan for the teacher not trained in music; (3) A usable, workable program that progresses to understanding; and (4) Effective communication with the entire class.

In addition to the *Threshold to Music* program, there are many types of worksheets and drills that can be used to teach the language of music. They can be found in any music workbook or can be written by any teacher who desires to do so. As this worksheet method involves the visual sense, the hearing impaired child should be successful in achieving the desired results by the implementation of worksheets.

5. Rhythmic sensation ranging from music to voice discrimination

This topic refers directly to the auditory training program. The specific objectives of an auditory training program for preschool children are: (1) To stimulate response to sound; (2) To improve the child's whole response to his environment; and (3) To develop voice quality. In order to stimulate response to sound, recorded music has proved to be a useful aid. By turning the music on and off, the child is encouraged to respond when he hears sound. By listening to recorded music, the child can learn to distinguish between a march and a waltz. By using the piano, response to descriptive music can be experienced. In this exercise, the child is taught to distinguish between fast and slow; loud and soft. The vibrations the child feels are a factor in a successful experience in this activity.

The children should be made aware of vibration. The following exercise has been successful in the teaching of this concept. A good lesson to further illustrate this point is described in the following exercise. Place a bass drum in the middle of the floor. The children are to remove their shoes and sit in a circle around the drum with the soles of their feet touching the outside of the drum. As the teacher taps the drum, the children will experience the vibration. With the shoes still off, tell the children to stand on the floor. Tap the drum again while the children watch the beat. In addition to feeling the action on the floor, they now also see the action of the drum. The next step in this activity would be to tell the children to stand with their backs to the drum approximately two feet away from it. They will respond to the beat of the drum by walking or running.

As a part of the auditory training program, the child should be taught to differentiate between environmental sounds and musical sounds. Included in the classification of environmental sounds would be door slamming, a car horn, a fire siren, and also animal sounds such as bow-wow, moo, baa, peep, and meow. Drums, bells, triangles or any other "noise-making" instruments are instrumental in differentiating between the various musical sounds. A suggested procedure in presenting a satisfactory learning situation would be to introduce two sounds, then three sounds, etc. The child should look and listen while an instrument is being played or a sound is being produced. After the audio-visual experience, the child should be encouraged to depend only on the audio or the vibrations felt in identifying objects.

Other objectives of auditory training programs are: (1) To continue to stimulate response to sound; and (2) To continue to develop better voice quality. To be able to differentiate between a march, a waltz, a man's voice and a woman's voice should be among the list of activities in which the primary age level should be involved. At this age the child should also learn to differentiate between high and low pitch, loud and soft volume levels, and to count chords. Although some profoundly deaf children cannot hear the high and low sounds, they may learn to distinguish pitch level by the vibrations. High and low can be illustrated by a leaf falling, smoke rising, and also by comparisons between airplanes and trains, the roof and basement of a house, and the sky and ground.

After learning the basic rhythmic movements, the child should learn to distinguish between the various rhythmic vibrations. Clapping, stamping and snapping rhythms are excellent echo exercises. Drums and various other instruments may be used in this method to add variety.

The game of Musical Chairs would be an interesting and varied way to conduct an auditory training lesson.

6. Non-verbal communication beyond reading (gestures, facial expressions, etc.)

Silent singing as taught in the *Threshold to Music* approach to music reading would be a non-verbal type of communication. Conducting motions are another effective means of silent communication. A child can be taught not only to conduct meter, but to express with his hands loud and soft, fast and slow. As he advances in conducting techniques, he could also learn to "cue in" voices or instruments, as the situation warrants.

7. Technological extensions or magnifications of the normal senses (everything from typewriters to telescopes)

Microphones or other amplifying equipment could be used to magnify sounds of the various melody and rhythm instruments.

8. Independent access, retrieval, and evaluation (including material suitable for residence hall use)

A student could view a filmstrip on an individual basis as often as he wished if he had a filmstrip viewer at his disposal. Composing rhythm band scores, or practicing his part in the rhythm band could be done individually as well as in groups.

9. Coordinated use of two or more senses (for example, seeing a radar profile on a TV screen)
    - (a) Seeing a dance performed
    - (b) Seeing an orchestra or an individual or even a small group of instruments perform
    - (c) Watching the inside mechanism of a piano
    - (d) Playing a string instrument
    - (e) Reading musical notation when performing, i.e., playing an instrument or reading from a notated chart
    - (f) Composing music and notating it
    - (g) Art activities done to music

B. What possibilities, if any, do you see for profitable use of –

1. Typewriters (Manual) –

Typewriters could possibly be used as a rhythmic instrument in rhythmic drills. This activity should not be a frequent one and it should be carefully planned and superivsed.

2. Telegraph (Morse Code) –

If the students have a knowledge of the Morse Code, they could use the telegraph for "singing" dialogue songs, i.e., question and answer songs, such as, Billy Boy, and Reuben and Rachel.

3. Polaroid cameras –

A camera could be used to take a picture of a musician playing an instrument for the class. Pictures taken of the class dramatizations would be of some value to those involved.

4. Microscopes –

5. Telescopes –

6. Motors, electric or gasoline – discriminate between sounds of motors

7. Locomotion devices –

8. Computers –

9. Jukeboxes –

The vibrations produced by a jukebox are usually greater than those produced by a record player so could be used in the auditory training program.

10. Television –

Televised performances by symphony orchestras would be a valuable teaching aid when the class is studying the instruments of the orchestra. By observing the drummers as well as other instruments in current rock and roll groups. The child could possibly "feel the beat"

Through television, the child may acquire ideas to use in creative activities. especially dancing. Television exposes the child to many different types of dance, such as, ballet, tap, and variety show entrance and finale group dances.

11. Movies –

Various movies could possibly be used to illustrate different types of musical activities. The deaf child is a good imitator. If he can see how an activity is performed, he then will perhaps, be more successful in that activity. Movies of children playing instruments, or singing or dancing might be quite valuable in the music program.

12. Filmstrips –

The use of the film strips was described in the visual learning section of this paper.

13. Braille –

14. Animals–auditory training–identification of animals and animal sounds

15. Sign language –

If this would be the only means by which a child would participate in vocal activities, such as, singing, this silent language may be permissible, but only in very few situations.

16. Lipreading

Lip reading would be apart of learning the words to songs that are not otherwise presented by means of visual aids.

17. Chemicals that work –

18. Mechanical drawing –

19. Abstract painting –

20. Cartooning –

21. Acrobatic dancing –

This would be an advanced rhythmic activity that could be coordinated with the physical education curriculum.

22. Organs –

Organs are excellent teaching aids for the hearing impaired child because of of the volume control. The vibrations produced by the organ can be easily felt by the student. Extremely high pitches and extremely low pitches can be reproduced on the organ with 2', 4', 16' and 32' (rarely found, however) stops.

23. Electric guitars –

The vibrations that the electric guitar produces could be felt by the student. As electric guitars have amplifiers the volume could be adjusted to the desired level. The children would probably enjoy learning to play this instrument as they could feel the vibrations with their fingers on the strings. The basic chords are easily learned and the child could play accompaniments for the class to folk or other songs.

24. Drums –

Drums of various sizes and shapes can be a profitable addition to the music program. The bass drum is probably one of the largest drums, the child will ever see. He will easily feel the vibrations it produces and could therefore be used in auditory training and rhythmic movement classes with great success. Moving to the beat of a drum is an activity all children enjoy.

25. Colored lights –

Colored lights can be used in reference to sound. There are "loud" and "soft" colored and also, bright and gay or sad and slow colors. Colors refer to the mood of music which is difficult for many hearing impaired children to comprehend. However, with the use of colored lights to express moods perhaps the meaning of mood would be more quickly understood. Colored lights focused on dancers could further "amplify" the mood they are portraying.

26. Temperature variation and control –

A study of how temperature variation affects drum heads might be interesting for the scientifically minded students.

27. Gauges and measuring devices –

A device to measure and study the vibrations of various instruments and sounds would be very interesting to most children.

28. Calculators –

29. Adding machines –

30. Guns –

31. Tools –

32. Sewing machines –

33. Stoves –

34. Others

Microphones – could be used to amplify the sound of instruments

Overhead projector–The use of this machine is unlimited as it can be used to illustrate so many musical activities.

PHYSICAL EDUCATION

As the emphasis changes in other educational areas it also changes in physical education. The early programs were derived from European "systems." They were autocratic, formal, militaristic and unnatural. This was not in keeping with our democratic way of life. It was a matter of following commands without true thought or meaningful learning. After this, physical education progressed to programs taught informally without much direction. The "play theory" dominated the program.

The demands of our society today were not met by this program which was in the nature of recreation. As a result, we have progressed to the area of *movement education.*

Eleanor Metheny describes a physically educated person as "one who has fully developed the ability to utilize constructively all of his potential capacities for movement as a way of expressing, exploring, developing and interpreting himself and his relationship to the world in which he lives."

Physical education must be directed. It can not be left to chance. It is the right of every child including the hearing impaired. The program must be accepted and understood by everyone involved; the child, the parent, the teacher and the administrators.

The three large areas within the framework of physical education are games, self-testing activities and rhythms. These areas should be integrated with all other subject areas wherever possible.

SUGGESTIONS FOR TEACHING THE HEARING IMPAIRED

Be sympathetic and understanding.

Have a friendly personality and a sense of humor.

Patience is of utmost importance.

Be careful not to aggrevate a condition.

Recognize the great variations in physical ability among the hearing impaired (for some it is their greatest asset and their means to a happier, fuller life.)

Know the child (check all sources of information).

Provide as much individual help as possible.

Position yourself for optimum communication – have your face at the child's eye-level by stooping or sitting.

Place the children in the best position – gathered in front of you rather than in a circle or line.

Have a good imagination – to improvise equipment and presentation of techniques for performing skills.

Reinforce meaning of words by performance of some movement and repeating words.

In demonstration, be careful not to use unnecessary movement – the child might miss the *clue* and misunderstand.

Use many signs with written words, pictures and stick figures for individual and small group practise. Space these carefully around the room with a place to move as the visual clue is understood.

Watch for signs of fatigue in the child.

Be prepared to cope with other problems combined with hearing impairment in some students (obesity, brain damage, lack of coordination, withdrawal, anti-social behavior, feeling of being slighted and distrust due to lack of understanding.)

Never use the deprivation of the physical education class as a disciplinary measure. Would you deprive the child of mathematics, reading or science as a disciplinary measure?

The hearing impaired need social and emotional involvement with hearing children. With a little extra help and understanding of directions they can cope with most activities of a regular class.

PHYSICAL EDUCATION

DIVISION I – PRE-SCHOOL

by Mrs. Julia Julien
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1. *Creative play* – depends on resourcefulness of the teacher: possibilities unlimited for movement exploration – child reflects the home; (mother, father, baby, etc.) the neighborhood (policeman, mailman, etc.) and the larger world in his environment (T.V., space, etc.)

   Story books and pictures expressing feeling and movement for big muscle activity and dramatic play.

2. A sense of physical balance and coordination

   Provide a variety of manipulatory materials (sand, balls, ropes, blocks, bean bags, hoops, etc.) beginning tumbling stunts, animal walks and other imitations as kitchen appliances, jungle gym, ropes ladders, boards, boxes and other apparatus for going-under, over ground and through (special awareness) jumping from various safe heights for direction and spacial awareness, timing, etc. – use of vision and head placement for balance and coordination.

3. Dramatization of personal, group, or literary experience activities that can be done alone or in small groups – child is self-centered; movement exploration using visual and verbal suggestions relating to the familiar – also new ideas to increase word meaning (stories, trips, games) mechanical objects. This develops creativity and independence.

4. Written and/or pictorial communication facility

   Similar to No. 3 – also include photographs of others and themselves, films, video tape, slides, etc.

5. Rhythmic sensation ranging from music voice discrimination

   Have children close to sound – action songs and records – use of percussion instruments (drums, cymbals, triangle, maracas, castanets).

   Locomotor movements (going somewhere); non-locomotor movements (staying in place and moving) with changes in speed, direction level and force.

6. Non-verbal communication beyond reading (gestures, facial expressions)

   The way people move tells a great deal about them. Use of demonstrations, telling a story with facial expression and meaningful gestures.

7. Technological extensions or magnifications of the normal senses

8. Independent access, retrieval and evaluation

   Free access to all types of play equipment for free choice of activity and self-directed play; care and return of materials; awareness of safety precautions; play with bicycles, trucks, etc.

9. Coordinated use of two or more senses

   Use of sense of touch to react with movement (feel smooth, soft, hard, sticky, hot, cold, slippery, etc.)

DIVISION II (6–8)

1. Visual Learning

   Ideas for movement exploration from things they see about them: clouds, smoke, clocks, art work, animals, the circus, people in various occupations (including community helpers). Learning directions – forward, backward, around, under, over; this can be applied to use of apparatus such as the jungle gym.

2. A sense of physical balance and coordination

   Balance – continue balancing activities while moving – tight rope walker, walking a fence, stepping stones (using levels and turns) – (use of arms and legs and head position); picking up objects from various stationary positions while maintaining balance – one foot balance, upright, bending, straight knee; tumbling stunts – awareness of posture, good body balance: coordination and timing – rolling objects at targets, throwing objects at targets (both stationary and moving targets) – skill through catching, bouncing games. Games: Tag, Call Ball, Stride Ball, Hot Ball, Teacher and Class, Jump the Shot, Mouse Trap, Catch the Cane, Come Along, Fire Chief, Roller Skating. Teach the child how to relax consciously – rag doll, piece of string, balloon deflating, melting snowman.

3. Dramatization of personal, group or literary experience

   Work alone, then with a partner and then small groups putting together movement patterns to form a dance that tells a story. Dance a Story albums – The Little Duck, The Magic Mountain, Balloons – children's story records suggesting movement (if there is any hearing); a class trip, new games, dramatic games; continue make-believe play; use of descriptive words: tall, short, sleepy, peppy, etc., simple ball games, chasing games.

4. Written and/or pictorial communication facility

   Use of pictures, posters, ideas from bulletin boards; photos–of themselves and others; films; books such as the "Noisy books"–video tape.

5. Rhythmic sensation

   Action songs and stories–The Bear Hunt, Snap Finger Polka, Keep it Moving, Dance Thumbkin Dance; respond to and use drums, rattles, castanets, cymbals, gongs, bells, triangles, rhythm sticks, etc. Discovering new ways to move–choice of their own movement–locomotor or stationary (axial); awareness of restricted space and others around them; appreciation of others responses; simple folk dances; Seven Jumps, Skip to my Lou.

6. Non-verbal communication beyond reading

   Human movement as "non-verbal language" influenced by the culture that surrounds the child and models he can imitate; acceptable movement and expected movement patterns of boys and girls body posture–tells a great deal about a person; the gesture – waving good bye, hello–with the outstretched hand, pointing, touching; art form–dance communicates ideas, emotion and information; learn positions as near, far, next to, beside, in back of or in front of.

7. Technological extensions or magnification of the normal senses

8. Independent access, retrieval and evaluation

   Have things such as balls, hoops, blocks, ropes, bean bags, pogo stick available for use. Stress care and return of equipment. Stress safety factors involved. Evaluation–use of physical performance tests; eager to show what they can do.

9. Coordinated use of two or more senses

   Reactions to the sense of touch in movement; experience to something soft, hard, smooth, sticky, hot, cold, wet, dry, light, heavy (can increase vocabulary in this manner). *Kinesthesis*–involves leading the part of the body through the performance of a skill. This is important for those who do not understand through other senses.

DIVISION III (9–11)

1. Visual

   Ideas for movement from their environment on a more advanced level: sport skills, mechanical objects, social studies/units, "follow the leader" with a variety of vigorous activity.

2. Balance and Coordination

Skills for team games—awareness of quality of movement, difference in interest and ability of boys and girls, apparatus work for balance and coordination (ropes, balance beams); more complex team games, more advanced tumbling and self-testing, activities: cart wheels, combinations of rolls, head stands, partner stunts; hopscotch; partner balancing activities: Flying Angel, Shoulder balance, Thigh Stand, Pyramid Building, Wrestling. Continue to work on relaxation—fitness activities, races, targets, roller skating and ice skating for balance.

3. Dramatization

Assume a leadership role; responsibility as officials, team captain, coach, etc.; charades—all of these develop poise and self confidence.

4. Written

Use of pictures, posters, bulletin boards, photographs, film strip, loop film (for skills), film (sports, posture, health and safety); books related to Physical Education as "Football for Champions," Basketball for Champions," "Physical Fitness for Champions." etc.

5. Rhythms

Use of combinations of locomotor movements to form basic dance steps for folk dance; awareness of speed direction, space and level; polka, step hop, schottische, two-step, waltz or waltz run, mixers, square dancing; learn about and enjoy various holidays through dance.

6. Non-verbal communication

Continues as with the younger children. Many sports can be enjoyed by understanding the arm movements of the officials—football, basketball, baseball. Most people say more by their body movements than the actual spoken word indicates.

7. Technological extensions or magnification of normal senses

Slow motion film; sport analysis; blown up pictures of posture and skill performance of the individual student.

8. Individual access, retrieval and evaluation

All kinds of sport equipment made available for participation on one's own—(softball equipment, footballs, volley ball, basketball, ropes, racquets, paddles, etc.) for practise and voluntary participation for pleasure; evaluation of posture, physical fitness, coordination through a testing program.

9. Coordinated use of two or more senses

DIVISION IV (12–)

1. Visual Learning

Interest in attending sport events, watch sports programs on T.V.

2. A sense of physical balance and coordination

   Acquire a knowledge of body mechanics continued and more refined skill development; increase the kinds of sport skills and the difficulty: bowling, shuffleboard, archery, golf, soccer, wrestling, badminton, tennis, volley ball, deck tennis; posture contests to maintain interest in good body alignment, relaxation–relief from tension–roller skating and ice skating.

3. Dramatization of personal, group or literary experience

   Girls continue with creative dance–boys, too, if this can be accomplished; pantomime plays; understand and take part with hearing children–find their place in a program; physical education demonstrations and pageants.

4. Written and/or pictorial communication facility

   Continue with all the preceeding pictures, posters, sport charts, visual aid in Physical Education–film, film strips, loop film, video tape, books on sport, dance and fitness on their level–both instructional and recreational.

5. Rhythmic Sensation

   Action type response to songs – by following if there is no hearing; folk dances at a more advanced level of steps and formations: Tinikling (Phillipine), Hora (Israel), Road to the Isles (Scottish); use of combinations of basic folk dance steps: Mixers, Square Dances; depends on Social Studies Units to be most effective; create dances with known steps; awareness of rhythm that can be *seen*; architecture, ocean waves, mechanical appliances, Popular dances.

6. Non-verbal communication beyond reading

   Playing together allows for a socialization which doesn't require verbalization.

7. Technological extensions of magnification of the normal senses

8. Independent access, retrieval and evaluation

   Need space to play; need others to participate with; need time to participate; plenty of equipment available after clear understanding of safety involved in its use; the equipment should be available; provide for competition; club activities (belonging to a group).

9. Coordinated use of two or more senses

BIBLIOGRAPHY

Anderson, Marian, Elliot, Margaret E. and LaBerge, Jeanne. *Play With a Purpose,* (Elementary School Physical Education) New York: Harpers and Row, 1966

Andrews, Gladys. *Creative Rhythmic Movement for Children,* Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1954.

Andrews, Gladys, Sourborn, Jeannette and Schneider, Elsa. *Physical Education for Today's Boys and Girls,* Boston: Allyn and Bacon, Inc., 1960.

Broer, Marion R. *An Introduction to Kinesiology,* Englewood Cliffs, New Jersey: 1968.

Broer, Marion R. *Efficiency of Human Movement,* Philadelphia: W. B. Saunders, 1966.

Daniels, Arthur S. *Adapted Physical Education,* New York: Harper and Brothers, 1954.

Diem, Lisilott. *Corrective Gymnastics and Special Exercise in Schools,* Frankfurt A.M., Germany, Wilhelm Limpert, Publisher English Edition, 1963.

Doughtrey, Greyson, *Methods in Physical Education and Health for Secondary Schools,* Philadelphia: W. B. Saunders Co., 1967.

Fait, Hollis F. *Special Physical Education: Adapted, Corrective, Developmental,* Philadelphia: W. B. Saunders, 1966. 2nd Edition

Kelly, Ellen Davis, *Adapted and Corrective Physical Education,* New York: The Ronald Press Company, 1965

Kozman, Hilda C., Cassidy, Rosalind, and Jackson, Chester O., *Methods in Physical Education,* Dubuque, Iowa: Wm. C. Brown Co., 1967.

Rathbone, Josephine L., and Hunt, Valerie, *Corrective Physical Education.* Philadelphia: W. B. Saunders Co., 1965.

*Schurr, Evelyn, L. *Movement Experiences for Children: Curriculum and Methods for Elementary School Physical Education.* New York: Appleton-Century-Crafts, 1967. p.3

Smith, Hope M., Editor, *Introduction to Human Movement,* Reading, Massachusetts: Addison-Wesley Publishing Co., 1968.

Vannier, Mary Helen and Foster, Mildred, *Teaching Physical Education in Elementary Schools,* Philadelphia: W. B. Saunders, 1968.

CONTENT

All of the following activities should present a progression in difficulty from pre-school through twelfth grade. Provide opportunities for problem-solving.

Games:

Low organization games
Races – individual and team
Individual and dual games
Sport skills
Lead-up games to individual and team sports
Quiet games – for the classroom, home and recreation

Self-Testing activities:

Basic movement skills
Developmental exercises
Stunts and tumbling
Small equipment
Large equipment

Rhythms:

Fundamental movements
Movement exploration
Dance – creative, folk, square and social

Activities that have been successful with the hearing impaired at the elementary school level.

Posture – contests
Sport skill practice
Officiating – Timer, scorer
Warm-up activities – involving the whole group to develop a group spirit
Obstacle course – requiring running, leaping, jumping, crawling, dodging
A sport run – similar to circuit training using sport skill movements at each station
Circuit training
Parachute play
Gym scooters
Pogo sticks
Hanging and swinging equipment – ropes, rings, stall bars, wall chinning bar
Striking equipment – bats, racquets, hockey sticks, golf clubs and targets
Wrestling
All types of races
Dance – creative, folk, square and social – use of creative rhythm records
Motor ability tests
Partner stunts
Jump rope skills and rhythms
Tug o war
Physical education demonstrations – tumbling, dance
Self-testing stunts combined with finding the written directions as posted
Use of color for identification, class organization and color recognition
Shuffleboard
Relaxing activities
How to be a good spectator
Balance beam activities
Physical fitness activities and tests

APPENDIX B

PHASES OF DEVELOPMENT
OF THE
MARGARET S. STERCK SCHOOL FOR THE HEARING IMPAIRED

The state, approximately a year ago, moved to establish an in state facility for the education of hearing impaired children. Until this time, our State was only one of two which did not meet this critical need within its own borders. This center is being located in and administered by the Newark Special School District for the following reasons:

1) Its proximity to the University of Delaware training center.
2) Its excellent transportation access.
3) Its location in the arch of the densest population.

The reason the State Department of Public Instruction adopted the resolution of having an instate facility for the hearing impaired was motivated by the fact that out of state school placements were filled and they were not accepting new referrals from the State of Delaware. The State also felt that by having a facility in the New Castle County area, eighty percent of the hearing impaired population could be day pupils, while for the other twenty percent there would be a residential program.

The National instance for hearing impaired is one per 1,000. This rate is on the increase since the outbreak of rubella (German Measles) in the past few years. Many young children suffered hearing impairment as a result of this outbreak. Therefore, it is felt that since Delaware has a relatively small population, it would be advantageous to operate a complete educational curriculum in a single facility for these handicapped children. Also, with one facility there is a better chance for obstaining and holding the necessary highly skilled personnel. By having an instate facility for the hearing impaired the State of Delaware will be able to educate more than twice the number of children for less total money than it costs for out-of-state placements. Needless to say, a great savings for the tax payer accrues, while the benefits to these youngsters multiply by having a state funded, locally operated, totally comprehensive program.

The facility being constructed is to be located at the corner of Chestnut Hill Road and Cherokee Drive in the Newark Special School District. This site was selected because it is adjacent to a "normal hearing" elementary – junior high school. The educational and social benefit of this proximity was considered a desirable item in selecting a location for this unit.

The school being constructed is the only one of its type ever built as part of the State Education Plan. Delaware's first State School for the Hearing Impaired is named after a woman who has devoted thirty-six years to the education of the deaf child–Miss Margaret S. Sterck of Wilmington. The Margaret S. Sterck School for the Hearing Impaired is being financed 100% by State funds.

The Margaret S. Sterck School is to have three main objectives:

1) Research for Curriculum Design.
2) Professional Training of Future Teachers of the Hearing Impaired, and
3) A Training Center for Ancillary Services as: psychology, social work, administration, speech pathology – audiology, etc.

The first construction phase is to contain ten specially designed classrooms. One-half of each classroom will be windowless with controlled environmental lighting. Here the formal educational program will take place. The remaining space will be devoted to informal instructional grouping arrangements of the children. The classrooms will be fully carpeted thereby making them better suited for their special use. Each classroom will be equipped with a low frequency induction auditory amplification system. The wires for this system are to be embedded in the concrete floor, making the wires inconspicuous. Each child is to be equipped with an individual hearing aid in which he is able to receive the teacher's voice through the hearing aid, as if the teacher were speaking into his or her aid individually. This is accomplished by carrier wave frequencies as supplied by the low frequency induction auditory amplifiers. Adjacent to each classroom is a small instruction room where the individual's instructional needs can receive the closer attention of the professional staff.

The core of the school will be the completely new instructional media center. This center is to be the first of its kind in the State of Delaware. Here the child will receive individual program instruction at his or her rate of learning. This relieves the teacher of these rote activities. She may then devote more time to other educational matters. The child will also be able to progress at his or her own rate of individual learning. A full-time instructional media specialist is to be employed to coordinate this program with the school's entire curriculum. The individual teacher will be able to select materials he or she may desire to be programmed from the instructional media center to her room via closed circuit television.

It is planned that this facility will be a training center for teachers of the hearing impaired. Each classroom is being equipped with a one way vision mirror from the corridor and a two way inter-communication system so that observation can take place without the teacher and pupils being distracted.

An objective of this program is to integrate the "hearing impaired child" with the "normal hearing child" in all areas that he or she is capable. The hearing impaired program is to have two phases at the senior high level. For those students that are able to integrate into a normal high school setting, "resource rooms" within a high school are planned. Each would have a fully trained teacher of the deaf, who would supply supportive speech and language work. For the remainder of the day, the student would receive instruction with the normal hearing child. For those students that are not able to integrate, a vocational program is planned for inclusion in the new vocational high school.

An acceptable program for the hearing impaired must be a continuous one. To meet the needs of the child at the pre-school and elementary levels and not in the high school is failing the child and the purpose of the program.

Many school districts initiate classes for the hearing impaired and feel as though they can educate these children locally. Even though the administrators and teachers of such programs are to be commended for their effort to help the hearing impaired children, these programs resemble the little red school house concept. This type of program did not succeed with hearing children, and it is difficult to justify the thought that it will succeed with hearing impaired or deaf children. An educational organization of this description has too many drawbacks to be worthy of the effort.

To combat such antiquated programming, pooling of children and financial resources are needed to provide needed equipment, transportation and other ancillary services.

Centralization is urgent for the following reasons:

1. Special course offerings which need homogeneous grouping.
2. Teacher acceptability of "hearing-impaired" children into their "normal-hearing" classes. If a particular complex is oriented to accepting this type of child, a better adjustment period is given the "hearing-impaired" child upon his trial period in the "normal-hearing" classrooms.
3. Facility must have an attractive program in order to attract quality teachers.
4. School must be within easy access of hospitals and universities for teacher and ancillary training program.

If district consolidation is of benefit to Delaware in normal education, it certainly is a must for "hearing impaired" or deaf education.

APPENDIX C

CONSTRUCTION PHASES FOR THE MARGARET S. STERCK SCHOOL

1967-68

Phase I

Complete construction of Multi-Purpose concept.

1968-69

Phase II

Construction of 20 student (4-12 year old) resident hall and dining area.

1969-70

Phase III

Construction of educational wing or pod.

1970-71

Phase IV

1) Construction of 20 student resident facility for 13-21 year old students.
2) Development of Vocational High School program.
3) Development of Academic High School program.

1971-72

Phase V

1) Complete construction of 4-12 year old resident hall.
2) Complete construction of education wing or pod.